Agrium
Conda Phosphate Operations

Agrium's Response to
EPA's Letter Dated August 31, 2005

Agrium asserts a claim of confidentiality with respect to the information contained herein. The information to which this confidentiality claim applies constitutes trade secret, privileged or confidential commercial or financial information, and/or information specifically exempted from disclosure by statute. Such information has been maintained in confidence by Agrium and is not reasonably obtainable by use of legitimate means without Agrium's consent, and Agrium intends to continue its existing practice of protecting the confidentiality of all information subject to this claim of confidentiality.

Public disclosure of the information for which Agrium asserts this confidentiality claim would cause substantial harm to Agrium's competitive position. Furthermore, the information to which this claim applies does not constitute emission data, standards or limitations within the meaning of Clean Air Act §114(c), or other similar relevant federal and/or state provisions. This information includes commercial and/or financial-related information regarding confidential, commercially valuable plans, processes or devices. Because Agrium's business is highly competitive in nature, the disclosure of any such information would substantially harm Agrium's business position by depriving it of an advantage inherent in such information, and/or by providing Agrium's competitors with the ability to derive a benefit from such information to Agrium's detriment. For example, certain information to which this claim applies potentially could be used by Agrium's competitors to project Agrium's future production and/or pricing patterns, to gain insight into Agrium's proprietary process designs and/or production and marketing strategies, and/or to negatively influence public/consumer perceptions of Agrium and Agrium products.

In the event that EPA, or the Idaho Department of Environmental Quality ("IDEQ") receives a request for public disclosure of any information contained herein, Agrium requests that EPA and/or IDEQ notify Agrium immediately upon receiving any such request, notify Agrium of any determination by EPA and/or IDEQ with respect to the confidentiality of such information, and provide Agrium an opportunity to comment regarding any such EPA/IDEQ determination prior to the public disclosure of the requested information.

AGRIUM/CONDA
CBI Document Production Index
in Response to 8/31/05 EPA Info. Request

BATES PREFIX	BEG BATES	END BATES	DATE	DOC TYPE	AUTHOR	RECIPIENT	DESCRIPTION
AGR-CBI	000831	000831		File Cover			Sub-File cover sheet, "Normal Operations" (documents located at AGR-CBI 000831-001053)
AGR-CBI	000832	000834	3/7/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Preneutralizer Tank
AGR-CBI	000835	000836	5/29/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Depressurizing the Ammonia System
AGR-CBI	000837	000840	3/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Dryer Scrubber
AGR-CBI	000841	000843	5/29/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Purging the Ammonia Sphere
AGR-CBI	000844	000846	5/22/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Purging the Ammonia System Inside the Plant
AGR-CBI	000847	000850	3/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Granulator Scrubber
AGR-CBI	000851	000853	12/25/2002	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Trouble Shooting Ammonia Unloading
AGR-CBI	000854	000859	6/6/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Loading an Ammonia Truck
AGR-CBI	000860	000868	9/20/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Unloading an Ammonia Railcar
AGR-CBI	000869	000875	5/31/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Loading an Ammonia Railcar
AGR-CBI	000876	000882	8/18/2004	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Normal Operation
AGR-CBI	000883	000889	6/6/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Unloading an Ammonia Truck
AGR-CBI	000890	000894	4/27/2004	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Bulkflow Cooler Plate Flushing
AGR-CBI	000895	000898	8/10/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Purging the Ammonia system from the Ammonia Supply Pumps to the Plant
AGR-CBI	000899	000903	4/1/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Monitoring the Upstairs Equipment
AGR-CBI	000904	000908	3/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Granulator Scrubber
AGR-CBI	000909	000913	3/6/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Granulator Scrubber Duct to the Granulator Fan

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AGR-CBI	000914	000918	3/1/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Loading an Ammonia Farm Tank
AGR-CBI	000919	000922	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Purging the Ammonia System Inside the Plant
AGR-CBI	000923	000927	3/7/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Replacing the Granulator Scrubber Panels
AGR-CBI	000928	000932	3/2/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Washing the Bulk Flow Cooler
AGR-CBI	000933	000937	3/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Dryer Scrubber
AGR-CBI	000938	000941	2/28/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Dryer Duct from the Dryer Through the Dryer
AGR-CBI	000942	000945	3/1/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Dryer Scrubber Duct to the Dryer Fan
AGR-CBI	000946	000949	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Purging the Ammonia Sphere
AGR-CBI	000950	000953	5/10/2005	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Accessing and Using the Stack Sampling Platform
AGR-CBI	000954	000957	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Washing the Pipe Cross Reactor
AGR-CBI	000958	000961	2/24/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Unloading a Dust Suppressant Truck
AGR-CBI	000962	000965	3/7/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Preneutralizer Tank
AGR-CBI	000966	000969	2/25/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Granulator Duct from the Head End of the Duct to the Granulator Scrubber
AGR-CBI	000970	000973	2/25/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Vent Bag House Duct
AGR-CBI	000974	000977	2/25/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the South Slurry Circulation Pump
AGR-CBI	000978	000981	2/25/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the North Slurry Circulation Pump
AGR-CBI	000982	000985	3/2/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Purging the Ammonia Supply Pumps with Steam
AGR-CBI	000986	000989	3/11/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Adjusting the Dust Suppressant to the Ribbon Blender

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BATES PREFIX	BEG BATES	END BATES	DATE	DOC TYPE	AUTHOR	RECIPIENT	DESCRIPTION
AGR-CBI	000990	000993	3/7/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Running Titrations and Specific Gravities
AGR-CBI	000994	000996	5/4/2004	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Shipping
AGR-CBI	000997	001000	2/28/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the West Pipe Cross Reactor Feed Pump
AGR-CBI	001001	001004	2/24/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the North Dryer Scrubber Transfer Pump
AGR-CBI	001005	001008	2/28/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the East Pipe Cross Reactor Feed Pump
AGR-CBI	001009	001012	2/24/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the Wet Preneutralizer Transfer Pump
AGR-CBI	001013	001016	3/14/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Preparing the West Preneutralizer Tank Transfer Pump for Start Up
AGR-CBI	001017	001020	3/14/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Preparing the East Preneutralizer Tank Transfer Pump for Start Up
AGR-CBI	001021	001024	2/27/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Preparing the West Pipe Cross Reactor Feed Pump for Start
AGR-CBI	001025	001028	2/24/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching to the South Dryer Scrubber Transfer Pump
AGR-CBI	001029	001032	3/18/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Resetting the Ammonia Vapor Excess Flow Valve
AGR-CBI	001033	001036	4/9/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Switching and Putting the Preneutralizer Transfer Pump Lines on Wash
AGR-CBI	001037	001040	3/3/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Cleaning the Dryer
AGR-CBI	001041	001043	2/25/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Preparing the North Slurry Circulation Pump for Start Up
AGR-CBI	001044	001047	3/18/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Bleeding Off the Ammonia Unloading Compressor
AGR-CBI	001048	001050	8/19/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Depressurizing the Ammonia System
AGR-CBI	001051	001053	8/18/2003	SOPs	Agrium Conda Phosphate Operations		Standard Operating Procedures: Granulation, Bleeding Off the D.P. Cell on the Ammonia to the Pipe

Normal Operations

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE PRENEUTRALIZER TANK

Granulation "C" Operator-01
03/7/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Preneutralizer Tank.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and Confined Space Entry Permit.

Tools and Equipment: Wrenches, shovel, broom, water hose, air monitor, locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Leather gloves • Hearing protection as required • Safety harness • Respirator as required • Tyvex suit as required	• Watch for trapped position • Watch for poor body position • Watch for poor footing • Watch for ammonia presence	

TASKS:

1. Fill out a confined space entry permit.
2. Lock and unlock switchgears and valves.
3. Open and close the man way.
4. Monitor the air.
5. Clean out the build up.

Steps	Key Points	PPE/Hazards

NOTE

THE PRENEUTRALIZER TANK MUST BE EMPTY TO PERFORM THIS TASK.

1.	Verify that the preneutralizer tank is empty.		
2.	Fill out a confined space entry permit.		
3.	Lock out and tag the east and west pipe reactor feed pump switchgears.	Verify that all locked out motors will not start.	
4.	Lock out the north and south slurry circulation pump switchgears.		
5.	Lock out the ammonia valve to the preneutralizer tank.		
6.	Lock out the 35# start up steam valve on top of the preneutralizer tank.		
7.	Lock out the 125# steam valve to the preneutralizer tank ammonia sparges.		
8.	Lock out the scrubber acid valve to the preneutralizer tank.		
9.	Lock out the feed acid valve to the preneutralizer tank.		
10.	Lock out the sulfuric acid valve to the preneutralizer tank.		
11.	Lock out the water valve to the preneutralizer tank.		
12.	Remove the bolts that secure the man way to the preneutralizer tank.		

Steps		Key Points	PPE/Hazards
13.	Open the man way door.	Watch for pinch points and poor body position.	
14.	Monitor the air quality inside the preneutralizer tank.		

CAUTION

IF THE AIR QUALITY INSIDE THE PRENEUTRALIZER TANK IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPERVISOR, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORRECTED.

15.	Climb into the preneutralizer tank.		
16.	Remove the build up from the walls and floor of the preneutralizer tank.	" Use the proper tools. Watch for falling material.	
17.	Wash down the walls and floor with a water hose.		
18.	Inspect all of the bolts and joints on the ammonia sparger supports.	Check for loose or broken bolts. Report any defects to the "A" operator or supervisor.	
19.	After all of the build up has been removed and repairs have made, Inspect the seal of the man way door. If required use a gortex sealant to create a gasket. Close the man way door.		
20.	Unlock all the switchgears and valves.		
21.	Notify the "A" operator that the preneutralizer tank is ready to be put in service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

DEPRESSURIZING THE AMMONIA SYSTEM

Granulation All Operators-01
05/29/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Depressurize The Ammonia System.

Requirements: All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.**		• **The scrubber system must be in operation to depressurize the ammonia system.**

TASKS:

1. Opening and closing valves.

Steps	Key Points	PPE/Hazards

NOTE

THE SCRUBBER SYSTEM MUST BE IN OPERATION TO DEPRESSURIZE THE AMMONIA SYSTEM TO PREVENT AN AMMONIA RELEASE

1.	Verify that the scrubber system is in service to prevent the release of ammonia to the atmosphere.		
2.	Close the liquid ammonia valve to the ammonia vaporizer.		
3.	Open the vapor ammonia valves to the Dryer and Granulator scrubbers by the automatic controller.		
4.	Open the vapor ammonia valves to the Dryer and Granulator scrubbers.		
5.	Open the vapor ammonia auto valve to the scrubbers on DCS in the control room.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE DRYER SCRUBBER

Granulation "C" Operator-01
03/03/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Dryer Scrubber.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and a Confined Space Entry Permit.

Tools and Equipment: air monitor, shovel, bar, double jack, chain ladder, running water hose, and wrenches.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Face shield • Rubber gloves • Hearing protection as required • Tyvex suit as required	• Watch for trapped position. • Watch for poor body position. • Watch for poor footing. • Watch for ammonia presence.	

TASKS:

1. Fill out a confined space entry permit.
2. Close and open valves.
3. Remove and replace the blank.
4. Open and close the man way.

Steps	Key Points	PPE/Hazards

NOTE

THE DRYER SCRUBBER SYSTEM MUST BE DOWN TO PREFORM THIS TASK.

1.	Verify that the dryer scrubber system has been shut down.		
2.	Lock out the switchgear on the dryer fan.	Verify that all the motors that are locked out will not start. Check with a qualified operator.	
3.	Lock out the vent bag house fan switchgear.		
4.	Lock out the switchgear on the dryer scrubber circulation pump.		

NOTE

IF THE DRYER SCRUBBER PUMP TANK HAS NOT BEEN DRAINED, AND THE CIRCULATION LINE CAN'T BE DRAINED, THEN THE VALVES ON THE CIRCULATION LINE WILL HAVE TO BE CLOSED AND LOCKED OUT.

5.	If necessary close and lock out the valve on the dryer scrubber circulation line.		
6.	Open the drain valve on the suction side of the dryer scrubber circulation pump and drain the circulation line.		
7.	Lock out the ammonia vapor to the dryer scrubber valve.		

	Steps	Key Points	PPE/Hazards
8.	Flag off the area around the bottom of the dryer scrubber using DANGER DO NOT ENTER flagging.		
9.	Remove the blank on the bottom of the dryer scrubber seal pot and drain the remainder of the scrubber liquor.	Use wrenches to remove the bolts holding the blank on. Watch for pinch points. Watch for poor body position. Watch for splashing scrubber liquor.	
10.	Open the man way and monitor the air.		

CAUTION

IF THE ATMOSPHERE QUALITY IN SIDE THE DRYER SCRUBBER IS NOT GOOD REPORT IT TO THE "A" OPERATOR OR TO THE SUPERVISOR, DO NOT ENTER THE DRYER SCRUBBER UNTIL IT HAS BEEN CORRECTED.

11.	Install the chain ladder.	Verify that the chain ladder is secure before climbing into the scrubber.	

Steps	Key Points	PPE/Hazards

NOTE

THE BOTTOM OF THE DRYER SCRUBBER IS A CONE SHAPE AND MAY BE HARD TO STAND ON.

12.	Enter the scrubber and remove the build up from the walls and floor.	Watch for poor footing. Watch for falling material. Watch for flying debris. Use the proper tools.	This task requires a safety watchman.
13.	Remove the build up from the walls and floor of the ventury.	Watch for trapped position.	
14.	Wash down the walls and floor with a water hose.		
15.	Remove all of the tools, ladder and close the man way.		
16.	Replace the blank on the bottom of the dryer scrubber.		
17.	Unlock all of the valves and switchgears.		
18.	Notify the "A" operator that the dryer scrubber is ready to be put in service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

PURGING THE AMMONIA SPHERE

Granulation All Operators-01
5/29/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Purge The Ammonia Sphere.

Requirements: All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Leather gloves • Hearing protection as required. • Respirator as required.	• Exposure to ammonia	• Ammonia release

TASKS:

1. Opening and closing valves.
2. Hooking up and unhooking steam hoses.

Steps		Key Points	PPE/Hazards
1.	Have the switch engine crew spot an empty ammonia car.		
2.	Empty the ammonia from the ammonia sphere to railcar.	Refer to the procedure Loading an ammonia railcar.	
3.	Hook the ammonia vapor hose from the truck station to the white pipe on the North side of the ammonia sphere approx. 4' tall going to plant.		
4.	Close the bleed valve on the truck vapor line.		
5.	Open the truck vapor line main valve.		
6.	Open the valve on the vapor hose.		
7.	Remove the lock and chain from the line coming into the plant in the southeast corner of the building above the stairway coming up from the east of the preneut tank		
8.	Close the valve coming off the ammonia vapor line to the preneutralizer tank and going to the vapor line to the Granulator and Dryer scrubbers.		
9.	Open the valve from incoming line to vapor line to Granulator and Dryer Scrubbers. (Valve that chain was taken off).		
10.	Open the valves on both sides of the auto valve.		
11.	Open the vapor ammonia auto valve to the dryer and granulator scrubbers (on the DCS).		

Steps		Key Points	PPE/Hazards
12.	Open the vapor ammonia valve to the dryer scrubber.		
13.	Open the valve on the vapor line to the granulator scrubber.		

NOTE

THIS SHOULD ALLOW THE AMMONIA VAPORS AND STEAM TO BLEED TO THE SCRUBBER SYSTEM.

14.	Bleed the ammonia vapors to the scrubber system until sphere pressure is as low as it will get (5 or 10# maximum).		
15.	Close the pump suction and discharge valves to the ammonia feed pumps.		
16.	Open the bleed valves to depressurize the ammonia feed pumps.		
17.	Open pump bypass line and close valves to preneutralizer tank spargers.		
18.	Verify that the liquid ammonia valves are open from ammonia vaporizer to the ammonia sphere.		
19.	Open the 125# steam to the ammonia line to allow the steam to flow into bottom of the ammonia sphere, purging the ammonia vapors to the Dryer and Granulator scrubbers.		
20.	After the ammonia sphere has purged for at least 12 hours, shut the 125# steam off and let the ammonia sphere start to depressurize.		
21.	Open the vent valve on top of the ammonia sphere to finish depressurizing the ammonia sphere.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

PURGING THE AMMONIA SYSTEM INSIDE THE PLANT

Granulation All Operators-01
05/22/03
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Steam purge the Ammonia System Inside The Granulation Plant.

Requirements: All operators will be trained every three years, and more often if necessary to stay in compliance. Two forms of testing will need to be met, skills and written.

Required Documents: Have a full knowledge of position expectation; this information is in the Job Books by position in the designated area.

Tools and Equipment: Pipe wrench or channel locks.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Safety toe foot wear** • **Safety glasses** • **Leather gloves** • **Hearing protection as required.** • **Respirator as required.**		• **The scrubber system must be in operation to purge the ammonia system.**

Purging The Ammonia System Inside The Granulation Plant

TASKS:

1. Open and closing valves.
2. Removing plugs.

Steps		Key Points	PPE/Hazards
1.	Shut the ammonia pump down.		
2.	Close the ammonia valve to the ammonia vaporizer.		
3.	Open the auto and the valve on the discharge side of the auto controller valve on the ammonia to the dryer and granulator scrubber. (3" globe valve)		
4.	Open the ammonia valve to the dryer scrubber. (2" ball valve).		
5.	Open the ammonia valve to the granulator scrubber. (2" ball valve)		
6.	Open the ammonia vaporizer drain valve. (1" globe valve)		
7.	Open the 125# steam valve to the ammonia sparges to the preneutralizer tank. (11/2" gate valve)		
8.	Let the 125# run for approximately 15 minutes to the preneutralizer tank.		
9.	Open the ammonia to the preneutralizer tank (8" globe valve)		
10.	Close the ammonia valves to the preneutralizer. 2 ea. (4" globe valves)		
11.	Let the ammonia system purged for approximately 30 min.		
12.	Open the bleed valves on the ammonia line to the preneutralizer. (1/2" gate valves)		
13.	Open the 2 bleed valve on the ammonia line to the pipe cross reactor. (1/2 globe valves)		
14.	Open the ammonia manual valve to the pipe cross reactor. (8" globe valve)		

Steps		Key Points	PPE/Hazards
15.	Open the automatic valve to the pipe cross reactor.	If necessary close back to automatic valve to the pipe cross reactor to force the steam through the rest of the bleed valves.	
16.	After the steam start to come out of all the bleed ports, let the steam purge through the ammonia lines for at least and hour or longer.		
17.	Shut the 125# steam off after the ammonia has been purged from the ammonia system.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE GRANULATOR SCRUBBER

Granulation "C" Operator-01
03/03/03

Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Granulator Scrubber.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and a Confined Space Entry Permit.

Tools and Equipment: Air monitor, shovel, bar, double jack, chain ladder, running water hose, and wrenches.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Face shield • Rubber gloves • Hearing protection as required • Tyvex suit as required	• Watch for trapped position. • Watch for poor body position. • Watch for poor footing. • Watch for ammonia presence.	

TASKS:

1. Fill out a confined space entry permit.
2. Close and open valves.
3. Remove and replace the blank.
4. Open and close the man way.

Steps	Key Points	PPE/Hazards

NOTE

THE GRANULATOR SCRUBBER SYSTEM MUST BE DOWN TO PREFORM THIS TASK.

1.	Verify that the granulator scrubber system has been shut down.		
2.	Lock out the switchgear on the granulator fan.	. Verify that all the motors that are locked out will not start. Check with a qualified operator.	
3.	Lock out the switchgear on the granulator scrubber circulation pump.		

NOTE

IF THE GRANULATOR SCRUBBER PUMP TANK HAS NOT BEEN DRAINED, AND THE CIRCULATION LINE CAN'T BE DRAINED, THEN THE VALVES ON THE CIRCULATION LINE WILL HAVE TO BE CLOSED AND LOCKED OUT.

4.	If necessary close and lock out the valves on the granulator scrubber circulation line to the granulator scrubber and to the granulator duct.		
5.	Open the drain valve on the suction side of the granulator scrubber circulation pump and drain the circulation line.		
6.	Lock out the ammonia vapor to the granulator scrubber valve.		

Steps		Key Points	PPE/Hazards
7.	Lock out the125# steam valve going to the top of the preneutralize tank.		
8.	Flag off the area around the bottom of the granulator scrubber using DANGER DO NOT ENTER flagging and tag stating that there is falling material.		
9.	Remove the blank on the bottom of the granulator scrubber seal pot and drain the remainder of the scrubber liquor.	Use wrenches to remove the bolts holding the blank on. Watch for pinch points. Watch for poor body position. Watch for splashing scrubber liquor.	
10.	Open the man way and monitor the air.		

CAUTION

IF THE ATMOSPHERE QUALITY IN SIDE THE GRANULATOR SCRUBBER IS NOT GOOD REPORT IT TO THE "A" OPERATOR OR TO THE SUPERVISOR, DO NOT ENTER THE GRANULATOR SCRUBBER UNTIL IT HAS BEEN CORRECTED.

11.	Install the chain ladder.	Verify that the chain ladder is secure before climbing into the scrubber.	

NOTE

THE BOTTOM OF THE GRANULATOR SCRUBBER IS A CONE SHAPE AND MAY BE HARD TO STAND ON.

Steps		Key Points	PPE/Hazards
12.	Enter the scrubber and remove the build up from the walls and floor.	Watch for poor footing. Watch for falling material. Watch for flying debris. Use the proper tools.	This task requires a safety watchman.
13.	Remove the build up from the walls and floor.	Watch for trapped position.	
14.	Remove the build up from the walls and floor of the ventury.		
15.	Wash down the walls and floor with a water hose.		
16.	Remove all of the tools, ladder and close the man way.		
17.	Replace the blank on the bottom of the granulator scrubber.		
18.	Unlock all of the valves and switchgears.		
19.	Notify the "A" operator that the granulator scrubber is ready to be put in service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

TROUBLE SHOOTING AMMONIA UNLOADING

Granulation "C" Operator-01
12/25/02
Reviewed Date: Friday, October 29, 2004
Reviewed By: Willie Martinez/ Gary Vorwaller

Objective: Provide operating personnel with step-by-step instruction on how to Trouble Shoot Unloading Ammonia.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment:

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required • Safety glasses	• Watch for pinch points • Possible fall hazard • Exposure to ammonia • Poor body position • Poor foot	• Ammonia release

TASKS:

1. Opening and closing valves

Steps	Key Points	PPE/Hazards

NOTE

SOME AMMONIA CARS HAVE REAL SENSITIVE EXCESS FLOW VALVES. TO GET THEM TO UNLOAD THE VAPOR PRESSURE NEEDS TO BE LOWERED

1.	Open the compressor by pass valve on the east wall about a 1/8 of a turn.	The compressor bypass valve is located on the floor south of the compressor on the east wall in the upright position must be open	
2.	Continually monitor car by feeling the hoses, watching the pressure gauge and the ammonia sphere level indicator.		
3.	Check sphere level gauge, the gauges pressure to and from car to be certain that that the excess valves have not tripped closed.		
4.	If the ammonia vapor excess flow has tripped closed, it will have to be reset.	Refer to the procedure, Resetting the ammonia vapor excess flow valve.	

Steps	Key Points	PPE/Hazards

NOTE

IF THE RED LIGHT STARTS TO FLASH OUTSIDE THE AMMONIA PUMP HOUSE, THIS MEANS THERE IS LIQUID AMMONIA IN THE SEPARATOR TANK IT MAY SHUT DOWN THE COMPRESSOR

5.	The ammonia separator pot will have to be drain.	Refer to the procedure: Bleed The Ammonia Unloading Compressor Separator Pot.	

NOTE

SOME TIMES AN AMMONIA RAILCAR WILL COME IN THAT HAS A HOLE IN ONE OF THE AMMONIA LIQUID UNLOADING TUBES OR THE TUBE MAY BE BROKEN OFF, IN THIS SITUATION PRESSURE WILL NOT BUILD UP IN THE CAR AND THE AMMONIA VAPOR WILL CIRCULATE BACK TO THE SPHERE THOUGH THE DAMAGED TUBE. IF THIS SITUATION COMES ABOUT YOU NEED TO:

6.	Close one of the liquid ammonia valves on the car.		
7.	Monitor sphere level gauge, if the level in the ammonia sphere doesn't start to climb, open the valve you have closed and close the other valve.		

NOTE

BE SURE THESE CARS GET EMPTIED OUT AND THEN BAD ORDERED SO THEY CAN GET REPAIRED AT THE HOME SHOP. THE VALVE WILL BE IDENTIFIED BY BEING MARKED.

8.	The level in the sphere should start to go up. In this case the valve on the line that is bad must be kept closed.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LOADING AN AMMONIA TRUCK

Granulation "C" Operator-02

6/6/05

Objective: Provide operating personnel with step-by-step instruction on how to Load An Ammonia Truck From The Ammonia Sphere.

Requirements: Operators loading ammonia trucks must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certification, Process Safety Management certification and all loading documents must be filled out, log book, and ammonia inventory papers.

Tools and Equipment: Wheel chocks, pipe wrench, brass hammer, crescent wrench, channel locks and caution signs.

PPE	Hazards	Environmental Considerations
• Hardhat • Work gloves • Safety toe foot wear • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required • Safety glasses	• Watch for pinch points. • Watch for poor body position • Exposure to ammonia	• Ammonia release

TASKS:

1. Setting and removing the wheel chocks.
2. Setting and removing the caution signs (both front and rear of truck).
3. Do a hose inspection.
4. Hook up and disconnect the hoses to the ammonia truck.
5. Monitoring the leveling the truck.

Steps	Key Points	PPE/Hazards

CAUTION

THE TRUCK DRIVER MUST STAY IN HIS TRUCK OR COMPLY WITH PPE REGULATIONS

NOTE

USE THE LADDER TO STAND ON WHEN GETTING ON/OFF AND WHEN HOOKING/UNHOOKING HOSES TO TRAILER. ENSURE LADDER STRADDLES THE TIRE FOR STABILITY.

1.	Secure the truck by setting the wheel chocks and set the caution signs 20' in front and rear of the truck.	Possible movement of truck	
2.	Inspect all of the hoses and fittings.		

CAUTION

ALL BLEED OFF VALVE MUST BE CLOSED BEFORE LOADING VALVES CAN BE OPEN

3.	Close all of the pressure bleed off valves on the truck and on the unloading station.	Possible exposure to ammonia	Possible ammonia release

DANGER

REMOVE THE FITTING CAPS SLOWLY THERE MAY BE AMMONIA IN THE LINES AND THEY MAY BE UNDER PRESSURE

4.	Remove the hose fitting caps on the liquid and vapor fittings on the truck		

Steps	Key Points	PPE/Hazards

NOTE

THE UNLOADING OPERATOR MUST BE IN ATTENDANCE WITH THE TRUCK THE ENTIRE TIME THE HOSES ARE CONNECTED TO THE TRUCK

5.	Hook up the hoses to the truck, (liquid hose to the liquid valve and vapor hose to the vapor valve). Using the **North** liquid line on the truck unloading and loading station.	Possible exposure to ammonia.	Possible ammonia release.
6.	Open the internal valves on the ammonia truck.	Watch for ammonia leakage around the valves and fittings.	

NOTE

AFTER STARTING THE AMMONIA PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

7.	Start the ammonia pump that is not in service.	The ammonia pumps start-stop stations are located on the north wall inside the ammonia pump house or on the southeast end of the truck, farm tank loading unloading station.	

Steps	Key Points	PPE/Hazards

CAUTION

OPEN THE LIQUID AND VAPOR VALVES SLOWLY WHILE PRESSURING UP THE LINES WITH AMMONIA

DANGER

OPEN THE LIQUID AND VAPOR VALVES SLOWLY. OPENING THE VALVES TOO FAST CAN OVER PRESSURE THE HOSES AND CAUSE THEM TO BUST, CAN ALSO TAKE TOO MUCH PRESSURE FROM THE PLANT AND POSSIBLY SHUT IT DOWN

8.	Open the liquid and vapor valves slowly on the truck and on the loading station.	Opening these valves too fast can over pressure the hose and shut the plant down.	
9.	Monitor the ammonia going to the truck by the spitter valve.		

CAUTION

MAXIMUN WEIGHT ON AN AMMONIA TRUCK IS 80%

10.	When the level in the truck reaches 80%, shut the ammonia pump down.		
11.	Close the vapor and liquid ammonia valves on the loading station.		
12.	Close the vapor and liquid ammonia valves on the truck and the internal valves.		

CAUTION

OPEN THE VAPOR AND LIQUID BLEED OFF VALVES SLOWLY-CHECK WIND DIRECTION AND FOR PERSONNEL IN THE AREA

13.	Open the bleed off valves on the loading station and the truck.	Open bleed off valves slowly and check for personnel in the area.	

Steps	Key Points	PPE/Hazards

DANGER

LOOSEN FITTINGS SLOWLY, THEY SLILL MAY HAVE SOME AMMONIA LEFT IN THEM AND MAY BE UNDER PRESSURE

14.	After the ammonia pressure has been bled off of the hose, close the valves on the hoses; disconnect the hoses from the ammonia truck.	Watch for possible ammonia left in the ammonia hoses.	Ammonia release
15.	Reinstall the truck fitting caps.		
16.	Remove the caution signs and wheel chocks.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

UNLOADING AN AMMONIA RAILCAR

Granulation "C" Opeator-02
9/20/05
Reviewed Date: 9/20/05
Reviewed By: Willie Martinez and Forrest Pipkin

Objective: Provide operating personnel with step-by-step instruction on how to Unload An Ammonia Railcar To The Ammonia Sphere.

Requirements: Operators unloading ammonia railcars must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certification, Process Safety Management certification, and all loading documents must be filled out, log book, Department of Transportation inspection papers and ammonia inventory papers. Refer to SMART Hose Fluid Systems, Proper Hose Use, Care and Maintenance document.

Tools and Equipment: Rail chocks, pipe wrench, brass hammer, crescent wrench, channel locks, caution signs, de-rail, car stops and lock for track #7 switch.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Work gloves • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required • Safety glasses	• Watch for pinch points • Possible fall hazard • Exposure to ammonia • Poor body position • Poor footing	• Ammonia release

TASKS:

1. Set and remove railcar stops.
2. Lock out and unlocking track #7 switch.
3. Department of transportation railcar inspection and hose inspection.
4. Hook up and disconnecting ammonia hoses.

General Instructions for SMART Hose Inspection

Inspect For:

1. Look for cuts, gouges, or worn spots in the hose cover that exposes textile or wire reinforcement.
2. Inspect for soft spots, bulges in cover, section of mashed flat hose or kinked areas.
3. Carefully examine a length of the hose (18" in length adjacent to where the coupling is attached) for any damage such as kinks, soft spots, cover cracks or permanent deformation of the hose from its original form.
4. Check couplings for any slippage, which is evidenced by misalignment of the coupling or scored/exposed areas on the hose cover next to the coupling, which indicates movement of the coupling.
5. Should the cable protrude through the end coupling, this is evidence that the hose has been stretched and damaged.
6. Inspect for hose cover blisters or loose outer cover. This may indicate conveyed product has breached the hose tube.

Corrective Action:

Remove hose from service. Contact SMART Hose for repair instructions.

Inspect For:

7. Check couplings for worn threads, gaskets, broken handles, cam arms and pins.

Corrective Action:

Remove hose from service. Replace suspect couplings from the hose and with new couplilngs. Never dissemble the Lifeline end.

Inspect For:

8. Inspect the inside of all couplings. Lifeline 1 coupling can be checked by using a ¼" blunt probe to see the valve stem moves. If it moves the LL1 is functional. Lifeline 2, check to see if wedges are exposed in the flow path. (Any attached fittings may have to be removed from the Lifeline end for inspection.)

Corrective Action:

Remove the hose from service. If the LL1 valve is frozen, remove from service. Contact Smart Hose for repair.

Inspect For:

9. Using a flat tip screwdriver can inspect lifeline couplings. Place the tip under the flapper valve, if it moves the LL3 is functional.

Corrective Action:

If LL3 valve is frozen, remove hose from service. Contact Smart Hose for repair.

Inspect For:

10. Before hose use, look down the inside of the Lifeline coupling for blockages or broken parts.
11. Inspect Lifeline couplings for any worn parts that may prevent normal function, damage to any safety device that prevents them from working, worn threads, excessive corrosion or rust or cracks in any part of the coupling.

Corrective Action:

If broken parts or blockages are observed, remove hose from service. Remove hose from service. Remove suspect couplings from the Lifeline end, replace with new coupling. Do not remove or dissemble the Lifeline end.

Any Questions refer to SMART Hose Fluid Systems, Proper Hose Use, Care and Maintenance document in the loading shack.

Steps		Key Points	PPE/Hazards
1.	Have the switch engine crew spot an ammonia railcar.		

CAUTION

VERIFY THAT THE HAND BRAKE IS SET AND CHOCKS ARE SET IN PLACE ON THE AMMONIA RAILCAR TO BE UNLOADED

2.	Lock out track #7 switch so that the switch is set to go to track #8, set the de-rail in the proper position, set the railcar stops in the proper position and set the caution signs.	Verify that the chocks are in place. Verify that the hand break is set. Verify that the wheel stops are in place.	Be aware of possible railcar movement.

NOTE

THE UNLOADING OPERATOR MUST PREFORM A DEPARTMENT OF TRANSPORTATION RAILCAR INSRECTION AND A HOSE INSPECTION. IF A DEFECT RAILCARD IS FOUND THEY MUST REPORT IT TO THERE SUPERVISOR FOR A BACK GROUND CHECK ON THE RAILCAR BEFORE IT CAN BE UNLOADED

CAUTION

OPEN AND CLOSE THE AMMONIA VALVES SLOWLY

BE AWARE OF POSIBLE AMMONIA EXPOSURE

3.	Close the bleed valves on the ammonia unloading compressor suction pot. (There are two valves, one on top west side and one on the bottom south side).	Watch for possible ammonia exposure.	

CAUTION

VERIFY THAT THE WALKWAY IS SECURED TO THE RAILCAR

4.	Lower the walkway to the railcar and secure.	Secure the walkway to the railcar. Watch for possible fall hazarder.	

5.	Remove the seal tag and the latch pin from the railcar dome and open dome.	Watch for pinch points and poor footing.	Hardhat Safety toe foot wear Rubber gloves Sarenex suit Full face respirator

DANGER

REMOVE THE LIQUID AND VAPOR VALVE PLUGS SLOWLY THEY MAY BE UNDER PRESSURE

NOTE

THE UNLOADING OPERATOR MUST BE IN ATTENDANCE WITH THE RAILCAR THE ENTIRE TIME THE HOSE ARE CONNECTED TO THE RAILCAR

NOTE

THE END OF THE VAPOR HOSE IS PAINTED WHITE AND THE ENDS OF THE LIQUID HOSES ARE PAINTED ORANGE

CAUTION

HOSES MUST BE TIGHTEND SECURELY. IF NOT IT CAN CAUSE AN AMMONIA RELEASE

DANGER

THE AMMONIA HOSES MUST BE HOOKED UP CORECTLY IF THEY NOT THEY WILL FILL THE COMPRESSOR WITH LIQUID AMMONIA AND CAUSE DAMAGE TO THE COMPRESSOR

6.	Install the ammonia hoses to the appropriate nipples and tighten them securely. The vapor hose to the vapor nipple and the liquid hoses to the liquid nipples.	The liquid nipples (2) point towards the A and B end of the railcar. Verify that the hoses are hooked up correctly.	Verify that the hoses are tight, if not it can cause an ammonia release.

DANGER

OPEN THE VAPOR AND LIQUD VALVES SLOWLY. OPENING THE VALVES TOO FAST COULD CAUSE THE EXCESS FLOW VALVES TO TRIP CLOSED OR COULD POSSIBLY OVER PRESSURE THE HOSES AND CAUSE THEM THE BURST

NOTE

AFTER STARTING THE COMPRESSOR CHECK FOR VIBRATION AND ABNORMAL NOISES

7.	Start the ammonia compressor.	Watch for ammonia leakage.	Possible ammonia release.
8.	As the ammonia is unloaded from the railcar, slowly open the liquid line vent valve to check the contents of the railcar.	Watch for possible exposure to ammonia.	Check the wind direction and for people down wind.

NOTE

IF THE AMMONIA COMPRESSOR SEPERATOR POT STARTS TO FILL WITH LIQUID AMMONIA A REDWARNING LIGHT WILL COME ON

9.	If the red warning light on the out side of the ammonia pump house comes on, the ammonia separator pot will have to be bled off.	Refer to the procedure, Bleeding Of The Ammonia Unloading Compressor Separator Pot.	

NOTE

IF THE AMMONIA VAPOR EXCESS FLOW VALVE TRIPS AND SHUTS THE AMMONIA UNLOADING COMPRESSOR DOWN, IT WILL HAVE TO BE RESET

10.	During the ammonia unloading process if the ammonia vapor excess flow valve on the ammonia vapor line trips shut it will shut the ammonia compressor down and the ammonia vapor gauge will read 0#, it will have to be reset.	Refer to the procedure. Resetting The Ammonia Vapor Excess Flow Valve.	

11.	Monitor the status of the car by the ammonia sphere level gauge on the west end of the ammonia pump house, also the hoses may bounce when the goes empty.		

CAUTION

CLOSE THE LIQUID AMMONIA BLOCK VALVE SLOWLY

12.	When the car is empty close the liquid ammonia valve on the walkway.	Close the liquid ammonia block valve slowly.	
13.	Turn the three-way valve on the compressor to the suction position (so the end of the valve handle is pointing to the west) to remove the ammonia vapor from the railcar.	Remove vapor to 70 p.s.i.	
14.	After the ammonia vapor has been removed from the railcar, shut the compressor down.	Start-stop station for the compressor is located on the north wall of the ammonia pump house.	
15.	Close the vapor valves on the compressor.	Watch for ammonia leakage around valves	
16.	Open the bleed off valves on the compressor suction pot. (There are two valves, one on the top and one on the bottom.		
17.	Reset the three-way valve back to the liquid position		
18.	Close the vapor valves on the walkway.	Confirm the liquid valve is closed.	

CAUTION

OPEN THE VAPOR AND LIQUID BLEED OFF VALVES SLOWLY-CHECK WIND DIRECTION AND FOR PERSONNEL IN THE AREA

19.	Close the vapor and liquid ammonia block valves on the railcar then open the bleed valves to bleed off the ammonia from the hoses and nipples.	Watch for possible exposure to ammonia.	Check the wind direction and for people down wind before opening the bleed valves.

DANGER

LOOSEN THE FITTINGS SLOWLY, THEY SLILL MAY HAVE SOME AMMONIA LEFT IN THEM AND MAY BE UNDER PRESSURE

20.	After the ammonia is bled off the hoses, disconnect the hoses from the nipples.	Watch for ammonia left in the hoses and nipples.	Possible exposure to ammonia.
21.	Remove the nipples from the railcar and replace the valve plugs. (Plugs must be wrench tight).	Watch for pinch point and poor footing.	
22.	Remove all of the tools from the railcar, close the dome and secure with the dome latch pin.		
23.	Lift the walkway from the railcar and secure to the handrail.		
24.	Remove the derail, car stops, caution signs and unlock track #7.		

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

LOADING AN AMMONIA RAILCAR

Granulation "C" Operator-02

5/31/05

Objective: Provide operating personnel with step-by-step instruction on how to Load An Ammonia Railcar From The Ammonia Sphere.

Requirements: Operators loading ammonia railcars must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certification, Process Safety Management certification, and all loading documents must be filled out, log book, Department of Transportation inspection papers and ammonia inventory papers.

Tools and Equipment: Rail chocks, pipe wrench, brass hammer, crescent wrench, channel locks, caution signs, de-rail, car stops and lock for track #7 switch.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Full face respirator • Work gloves • Rubber gloves • Saranex suit • Hearing protection as required • Safety glasses	• Watch for pinch points • Possible fall hazard • Exposure to ammonia • Poor body position • Watch for trip hazards.	• Ammonia release

TASKS:

1. Set and remove railcar stops.
2. Lock out and unlocking track #7 switch.
3. Department of transportation railcar inspection and hose inspection.
4. Hook up and disconnecting ammonia hoses.

Steps	Key Points	PPE/Hazards

CAUTION

VERIFY THAT THE VALVES UNDER TREE HOUSE ARE SWITCHED TO THE LOADING DIRECTION (L2, L3, L4, L5)

1.	Switch liquid valve L2 to the closed position.		
2.	Open L3 (truck loading and unloading valve) to the open position.		
3.	Open L4 (ammonia block valve).		
4.	Close L5 (liquid rail /truck unloading valve).		
5.	Have the switch engine spot an Empty Anhydrous Ammonia car.		

CAUTION

VERIFY THAT THE HAND BRAKE IS SET AND CHOCKS ARE SET IN PLACE

6.	Lock out track #7 switch so the switch is set to go to track #8, set the de-rail in the proper position, set the car stops in the proper position and set the caution signs.	Verify that the chocks are in place. Verify that the hand break is set. Verify that the wheel stops are in place.	Be aware of possible railcar movement.

CAUTION

VERIFY THAT THE WALKWAY IS SECURED TO THE RAILCAR

7.	Lower the walkway to railcar and secure.		

NOTE

THE UNLOADING OPERATOR MUST PERFORM A DEPARTMENT OF TRANSPORTATION RAILCAR INSPECTION AND A HOSE INSPECTION. IF A DEFECT CARD IS FOUND THEY MUST REPORT IT TO THIER SUPERVISOR FOR A BACK GROUND CHECK ON THE RAILCAR BEFORE IT CAN BE LOADED

8.	Remove the latch pin from the railcar dome and open the dome.	Watch for pinch points, poor footing and poor body position.	

Steps	Key Points	PPE/Hazards

CAUTION

VERIFY THAT THE VAPOR AND LIQUID VALVES ARE CLOSED TIGHT BEFORE TAKING THE VALVE PLUGS OUT

DANGER

REMOVE THE LIQUID AND VAPOR VALVE PLUGS SLOWLY THEY MAY BE UNDER PRESSURE

9.	Remove the vapor and liquid valve plugs.	Remove valve plugs slowly they may be under pressure. Watch for pinch points and poor footing.	Possible ammonia release.
10.	Install pipe nipples for hose attachment.	Watch for pinch points and poor body position.	

Steps	Key Points	PPE/Hazards

NOTE

THE LOADING OPERATOR MUST BE IN ATTENDANCE WITH THE RAILCAR THE ENTIRE TIME THE HOSES ARE CONNECTED TO THE RAILCAR

NOTE

THE END OF THE VAPOR HOSE IS PAINTED WHITE AND THE ENDS OF THE LIQUID HOSES ARE PAINTED ORANGE

CAUTION

THE HOSES MUST BE TIGHTEND SECURELY. IF NOT IT CAN CAUSE AN AMMONIA RELEASE

11.	Install the ammonia hoses to appropriate nipples (vapor hose to vapor nipple and liquid hoses to liquid nipples)	Verify that the hose are hooked properly, if not the railcar will not load. The liquid nipples point towards the A and B end of the railcar.	Verify the hoses are tight, if not it will cause an ammonia release.
12.	Verify that the vapor and liquid valves going to the compressor are closed.		
13.	Close the bleed off valves on walkway on both the vapor line and the liquid line.	Verify that the bleed off valves are closed, if not they will cause an ammonia release.	

NOTE

AFTER STARTING THE PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

14.	Start the ammonia pump that is not in service and monitor the ammonia flow to the railcar by the gauging device on the railcar.		

Steps	Key Points	PPE/Hazards

DANGER

OPEN THE VAPOR AND LIQUD VALVES SLOWLY. OPENING THE VALVES TOO FAST COULD CAUSE THE EXCESS FLOW VALVES TO TRIP CLOSED OR COULD POSSIBLY OVER PRESSURE THE HOSES AND CAUSE THEM THE BURST

15.	Open the vapor and liquid valves on the railcar and on the walkway.	Open vapor and liquid valve slowly.	
16.	Monitor the level in the ammonia railcar by the gauging devise, when it reaches 18" it is approximately 80% full shut the ammonia pump off.	80% full is maximum weight on an ammonia car.	

CAUTION

OPEN THE VAPOR AND LIQUID BLEED OFF VALVES SLOWLY-CHECK WIND DIRECTION AND FOR PERSONNEL IN THE AREA

17.	Close the liquid and vapor valves on the railcar and on the walkway and open the bleed off valves to depressurize the vapor and liquid hoses.	Check for personnel in the area before opening the bleed off valves.	Hardhat Rubber gloves Saranex suit Full face respirator Safety toe foot wear

DANGER

LOOSEN THE FITTINGS SLOWLY, THEY SLILL MAY HAVE SOME AMMONIA LEFT IN THEM AND MAY BE UNDER PRESSURE

18.	Unhook the liquid and vapor hoses and remove pipe nipples.		

NOTE

THE VALVE PLUGS MUST BE INSTALLED WRENCH TIGHT

19.	Reinstall valve plugs.	Valve plugs must be wrench tight.	
20.	Remove all tools, close the dome and secure with the dome latch pin.		

Steps		Key Points	PPE/Hazards
21.	Raise the walkway and secure to the handrail.	Watch for pinch points.	
22.	Drop the railcar stops, derail, remove caution signs and unlock track # 7 switch.	Watch for pinch points.	
23.	Contact switch engine operator for another ammonia railcar spot.		
24.	Switch liquid valve L2 to the open position.		
25.	Close L3 (truck loading and unloading valve) to the open position.		
26.	Close L4 (ammonia block valve).		
27.	Open L5 (liquid rail /truck unloading valve).		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

NORMAL OPERATION

Granulation "A" Operator-01
8/8/18
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to perform.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required.	• Exposure to ammonia • Contact with phos acid and sulfuric acid	• Ammonia release

TASKS:

1. Making adjustment when necessary.

Steps	Key Points	PPE/Hazards

NOTE

DURING THE NORMAL OPERATION OF THE GRANULATION PLANT ADJUSTMENT WILL NEED TO MADE TO THE AMMONIA, SLURRY, PHOS ACID, FERTILIZER FEED STOCK AND WATER ALSO TO THE SULFURIC ACID FOR 16-20-0 AND TO MAP FOR GRADE CONTROL TO KEEP THE PLANT RUNNING AND TO COMPLY WITH THE EPA STANDARDS ON THE SCRUBBER SYSTEM

NOTE

ADJUSTMENTS TO THE SCRUBBERS AND SCRUBBER PUMP TANKS

1.	Adjust the amount of acid going to the dryer scrubber pump tank, if the level gets too low increase the set point on the fertilizer feed stock auto controller. If the level gets too high, decrease the amount of acid going to it by lowering the set point on the auto control	"A" operator will perform this task.	
2.	Adjust the amount of acid going to the granulator scrubber tank if the is level gets too high or too low by adjust the set point on the auto level controller to get the desired level.	"A" operator will perform this task.	
3.	Adjust the amount of ammonia going to the scrubbers, if the pH gets too low or too high, by increasing or decreasing the set point on the ammonia controller to the scrubbers.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
4.	Sulfuric acid will be used to control the pH if water is being used for the scrubbing media.		
5.	Adjust the amount of sulfuric acid going to the scrubber pump tank, if the pH get too high or too low, by increasing or decreasing the set point on the sulfuric to the scrubber pump tank auto controller.	"A" operator will perform this task.	
6.	Adjust the pressure drop on the dryer scrubber, if it get too high or too low, by increase or decrease the fan amps by opening or closing the dryer fan louvers.	"A" operator will perform this task.	
7.	Adjust the pressure drop on the granulator scrubber, if it gets too high or too low either, by opening or closing the granulator fan louvers or open or close the louvers in the granulator scrubber venturi.	"A" operator will perform this task.	
8.	Adjust the gravity on the scrubber pump tanks, if it get too high or too low either, by increasing or decreasing the amount of water going to them through the auto controller or the spray over the dryer scrubber pump tank.	"A" or "B" operator will perform this task.	

NOTE

ADJUSTMENTS TO THE PRENEUTRALIZER TANK

9.	Adjust the amount of acid going to the preneutralizer tank if the level get too high or too low by increasing or decreasing the set point on the acid to the preneutralizer auto controller.	"A" operator will perform this task.	
10.	Adjust the amount of scrubber media going to the preneutralizer tank, if the gravity on the slurry get too high or too low, by increasing or decreasing the set point on the scrubber acid to the preneutralizer tank auto controller.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
11.	Adjust the amount of ammonia going to the preneutralizer tank, if the mole ratio gets too high or too low, by increasing or decreasing the set point on the ammonia to the preneutralizer auto controller.	"A" operator will perform this task.	
12.	Adjust the amount of water going to the preneutralizer tank when running 16-20-0, if the slurry temperature gets too high or too low, by increasing or decreasing the set point on the water to the preneutralizer tank auto controller.	"A" operator will perform this task.	
13.	Adjust the amount of sulfuric acid going to the preneutralizer tank, being used for grade control for 11-52-0, by increasing or decreasing the set point on the sulfuric acid to the preneutralizer tank auto controller.	"A" operator will perform this task.	
14.	Adjust the sulfuric acid going to the preneutralizer tank, for 16-20-0-grade control, by increasing or decreasing the ratio on the sulfuric acid auto controller to the preneutralizer tank.	"A" operator will perform this task.	
15.	Open the 125# steam to the preneutralizer tank ammonia spragers if the ammonia flow starts to drop of to clean the build up out.	"B" operator will perform this task.	

NOTE

ADJUSTMENTS TO THE AMMONIA VAPORIZER (BFL)

16.	Adjust the pressure on the ammonia vaporizer, if it is too high or too low, by increasing or decreasing the set point on the ammonia vaporizer pressure auto controller.	"A" operator will perform this task.	

Steps	Key Points	PPE/Hazards

NOTE

ADJUSTMENTS TO THE AMMONIA FEED PUMPS

NOTE

THE AMMONIA LINE PRESSURE NORMALLY RUNS BETWEEN 120-140 PSI NOT TO EXCEED 80 LBS DIFFERENTIAL BETWEEN THE LINE PRESSURE AND THE SPHERE PRESSURE

17.	Adjust the ammonia line pressure to the ammonia vaporizer from the ammonia feed pumps, if the pressure gets too low or too high, by increasing or decreasing the set point on the ammonia line pressure auto controller.	"A" operator will perform this task.	

NOTE

ADJUSTMENTS TO THE PIPE CROSS REACTOR

18.	Adjust the amount of ammonia going to the Pipe Cross Reactor, if the granulator discharge product has too much or not enough ammonia, by increasing or decreasing the ratio on the ammonia to the Pipe Cross Reactor auto controller.	"A" operator will perform this task.	
19.	Open the 250# steam controller to the Pipe Cross Reactor, for a few seconds, if the pressure gets too high or the flow starts to drop off to clean it out.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
20.	Adjust the slurry flow to the Pipe Cross Reactor, if the preneutralizer level starts to climb or drop or if the rate needs to be adjusted for the tank#21 level, by increasing or decreasing the slurry to the Pipe Cross Reactor auto controller set point.	"A" operator will perform this task.	

NOTE

ADJUSTMENTS TO THE DRY SYSTEM

21.	Adjust the amount of product leaving the product weigh belt, if the recycle load gets too high or too low, by increasing or decreasing the set point on the #1 drag flight amps.	"A" operator will perform this task.	
22.	Adjust the dryer furnace temperature, if the product temperature gets too hot or too cold, by increasing or decreasing the set point on the dryer furnace gas controller.	"A" operator will perform this task.	
23.	Adjust the amount of cooling water going the Bulk Flow Cooler, if the product temperature get too hot or too cold, by increasing or decreasing the set point on the product temperature controller.	"A" operator will perform this task.	
24.	Adjust the amount of dust suppressant going to the ribbon blender, if the product going to shipping get too dust or too oily, by either increasing or decreasing the line pressure or changing the spray nozzle.	"C" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

UNLOADING AN AMMONIA TRUCK

Granulation "C" Operator-02
6/6/05
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Unload An Ammonia Truck To The Ammonia Sphere.

Requirements: Operators loading ammonia trucks must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certification, Process Safety Management certification, and all loading documents must be filled out, log book and ammonia inventory papers.

Tools and Equipment: Wheel chocks, pipe wrench, brass hammer, crescent wrench, channel locks and caution signs.

PPE	Hazards	Environmental Considerations
• Hardhat • Leather gloves • Safety toe foot wear • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required	• Watch for pinch points. • Watch for poor body position • Exposure to ammonia	• Ammonia release

• Safety glasses		

TASKS:

1. Setting and removing the wheel chocks.
2. Setting and removing the caution signs (both front and rear of truck).
3. Do a hose inspection.
4. Hook up and disconnect the hoses to the ammonia truck.

Steps	Key Points	PPE/Hazards

CAUTION

THE TRUCK DRIVER MUST STAY IN HIS TRUCK OR COMPLY WITH PPE REGULATIONS

NOTE

USE THE LADDER TO STAND ON WHEN GETTING ON/OFF AND WHEN HOOKING/UNHOOKING HOSES TO TRAILER. ENSURE LADDER STRADDLES THE TIRE FOR STABILITY.

1.	Secure the truck by setting the wheel chocks and set the caution signs 20' in front and rear of the truck.	Possible movement of the truck	

NOTE

THE UNLOADING OPERATOR MUST PERFORM AN AMMONIA HOSE INSTECTION

2.	Inspect all of the hoses and fittings.	Watch for loose bolts on the hose clamps and for any defect in the hoses.	

CAUTION

ALL BLEED OFF VALVE MUST BE CLOSED BEFORE UNLOADING VALVES CAN BE OPEN

3.	Close all of the pressure bleed off valves on the truck and on the	Possible exposure to ammonia	Possible ammonia release

	unloading station.		

Steps	Key Points	PPE/Hazards

DANGER

REMOVE THE FITTING CAPS SLOWLY THERE MAY BE AMMONIA IN THE LINES AND THEY MAY BE UNDER PRESSURE

4.	Remove the hose fitting caps on the liquid and vapor fittings on the truck		

NOTE

THE UNLOADING OPERATOR MUST BE IN ATTENDANCE WITH THE TRUCK THE ENTIRE TIME THE HOSES ARE CONNECTED TO THE TRUCK

DANGER

UN LOADING HOSES MUST BE HOOKED UP CORECLY, IF NOT IT WILL FILL THE AMMONIA UNLOADING COMPRESSOR WITH LIQUID AMMONIA AND CAN CAUSE DAMAGE TO THE COMPRESSOR. THEY MUST ALSO BE TIGHTLY SECURE OR IT CAN CAUSE AN AMMONIA RELEASE

5.	Hook up the hoses to the truck, (liquid hose to the liquid valve and vapor hose to the vapor valve). Using the **South** liquid line on the truck unloading and loading station.	Possible exposure to ammonia.	Possible ammonia release.

DANGER

OPEN THE LIQUID AND VAPOR VALVES SLOWLY; OPENING THE VALVES TOO FAST CAN OVER PRESSURE THE LINE AND CAUSE THEM TO BUST

6.	Open the liquid and vapor valves slowly on the truck and on the hoses.		
7.	Open the ammonia valves on the unloading station.	Opening these valves too fast can over pressure the hoses.	Over pressuring can cause a hose to burst and cause an ammonia release and possibly shut the plant down.

Steps		Key Points	PPE/Hazards
8.	Close the bleed valves on the ammonia unloading compressor suction pot. (There are two valves, one on top west side and one on the bottom south side).		
9.	Open the liquid and vapor valves on the unloading compressor.		

NOTE

AFTER STARTING THE COMPRESSOR CHECK FOR VIBRATION AND ABNORMAL NOISES

10.	Start the ammonia-unloading compressor.	The start-stop station is located in the ammonia pump house on the north wall.	
11.	Monitor the unloading progress by the spiter valve on the side of the truck.		

NOTE

IF THE AMMONIA COMPRESSOR SEPERATOR POT STARTS TO FILL WITH LIQUID AMMONIA A RED WARNING LIGHT WILL COME ON

12.	If the red light on the out side of the ammonia pump house comes on, the ammonia separator pot will have to be bled off.	Refer to the procedure, Bleeding off the ammonia unloading compressor separator pot.	

NOTE

IF THE AMMONIA VAPOR EXCESS FLOW VALVE TRIPS AND SHUTS THE AMMONIA UNLOADING COMPRESSOR DOWN, IT WILL HAVE TO BE RESET

13.	During the ammonia unloading process if the ammonia vapor excess flow valve on the ammonia vapor line trips shut it will shut the ammonia compressor down and the vapor ammonia gauge will read 0#, it will have to be reset.	Refer to the procedure, Resetting The Ammonia Vapor Excess Flow Valve.	
Steps		**Key Points**	**PPE/Hazards**
14.	When the truck goes empty the hoses will bounce slightly.		
15.	Shut the unloading compressor off.	Watch for ammonia leakage around the ammonia valves.	Possible ammonia release.

CAUTION

OPEN AND CLOSE ALL AMMONIA VALVES SLOWLY

16.	Close the liquid and the vapor valves on the compressor		Possible ammonia release.
17.	Open the bleed off valves on the compressor suction pot. (There are two valves, one on the top and one on the bottom.	Open and close ammonia valves slowly.	
18.	Close the ammonia valves on the truck.	Close ammonia valves slowly.	Possible ammonia release.
19.	Close the vapor and liquid internal valves on the truck.		
20.	Close the vapor and liquid valves on the unloading station.		

CAUTION

OPEN THE VAPOR AND LIQUID BLEED OFF VALVES SLOWLY-CHECK WIND DIRECTION AND FOR PERSONNEL IN THE AREA

21.	Open the bleed valves on the ammonia unloading compressor	Open the bleed off valves slowly.	

	suction pot. (There are two valves, one on top west side and one on the bottom south side).		

DANGER

LOOSEN THE FITTINS ON THE HOSES SLOWLY THERE MAY STILL BE SOME AMMONIA LEFT IN THE LINE

22.	After the ammonia has been bled off the hoses, close the ammonia valves on the hoses.		
Steps		**Key Points**	**PPE/Hazards**
23.	Disconnect the liquid and vapor hoses from the ammonia truck.	Watch for possible ammonia left in the hoses.	Watch for possible ammonia left in the hoses.
24.	Reinstall the caps on the truck fittings.		
25.	Remove the caution signs and wheel chocks.	Possible truck movement.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

BULKFLOW COOLER PLATE FLUSHING

GRAN-Normal Operation-01
4/27/04

Objective: Provide operating personnel with step-by-step instruction on how to flush the bulkflow cooler plate.

Requirements: No special requirements required.

Required Documents: Must have knowledge of this procedure.

Tools and Equipment: Please refer to the diagram at the end of the procedure for visual. Must have ½ pipe caps available.

PPE	Hazards	Environmental Considerations
Hardhat, safety glasses, steel-toed boots, hearing protection.	Falling debris, steam and HOT water	

BULKFLOW COOLER PLATE FLUSHING

TASKS:

1. Disconnecting plates when cooler is out of service.
2. Plugging connections to isolate plates and allow cooler to be back into service.
3. Backflushing plates to remove pluggage.
4. Reconnecting plates to return back to service.

Steps		Key Points	PPE/Hazards
1.	Isolate the cooling water loop and drain the water out of the Bulkflow Cooler.	This has to be done during a wash.	
2.	Disconnect the upper and lower flex-hoses on 4-6 cooler plates from the headers.		Apply goggles and/or faceshield at this time.
3.	Break the unions on the flex hose and remove the hose from the header nipple.		
4.	Put the union back together and leave the flex hoses attached to the plates.		
5.	Install a ½" pipe cap on the water header nipples.	After capping the nipples, you can restore water flow to the cooler.	Goggles and/or faceshield can be eliminated at this time.
6.	Connect water and compressed air hoses to the mixing tee as shown in the attached diagram.	Be sure the air hose is attached to the branch with the check valve.	
7.	Connect the mixing tee to the lower plate flex hose at location "C".		
8.	Connect a water hose to the upper plate flex hose at location "D", and route to the wet side.	Tie the hose end down to prevent it from whipping around during the flush.	

NOTE

If you are pulling water from the cooling loop for the flush, notify the PPA operator that you will be pulling ~10 gpm from the loop so that he can adjust the tower blowdown rate as necessary.

	Steps	Key Points	PPE/Hazards
9.	Slowly open the mixing tee water valve (Valve "A") and fill the plate.	Open the water valve as wide as possibly without exceeding 100 psi on the pressure gauge (plates are rated for 100 psi)	
10.	Crack the mixing tee air valve (Valve "B") open slightly.	Add only enough air to "rumble" the discharge hose. This will be ¼ - ½ a turn on the air valve.	
11.	Flush for 2 hours		
12.	Shut off the water to the mixing tee, and open the air valve a little more to blow the water out of the plate. Shut off the air.		
13.	Switch the cooler plate hose connections, this time connecting the mixing tee to the upper plate flex hose (location "D") and drain hose to the wet side to the lower flex hose connection (location "C").		
14.	Open the water valve as in Step 7 and flush for 15 minutes.		
15.	Shut off the air and water at the mixing tee.		
16.	Repeat Steps 5-8, and flush for one hour		

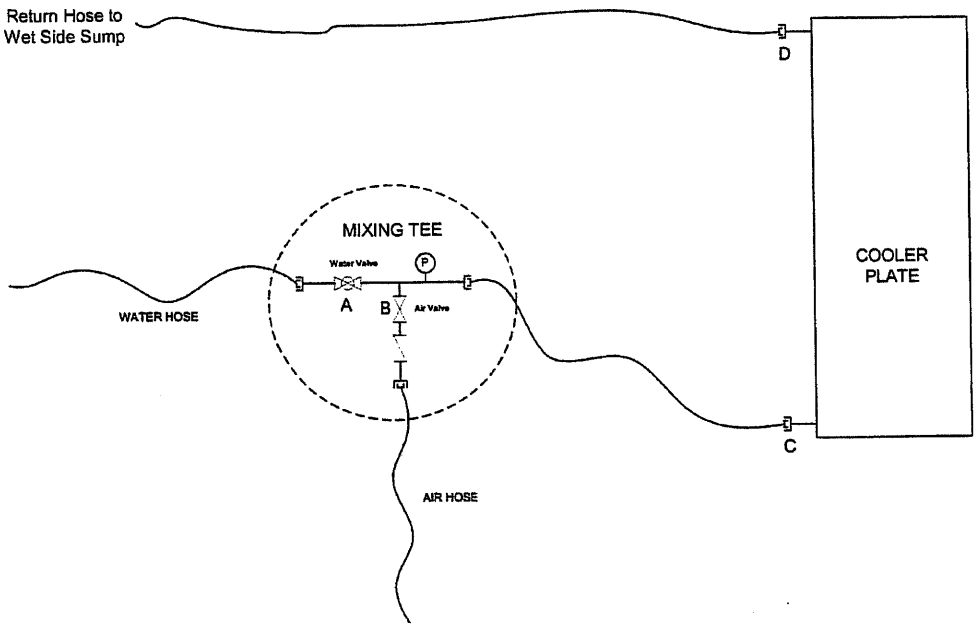
Steps		Key Points	PPE/Hazards
17.	Shut off the water to the mixing tee, and open the air valve a little more to blow the water out of the plate. Shut off the air.		
18.	Repeat Steps 11 – 12		
19.	Shut off the water to the mixing tee, and open the air valve a little more to blow the water out of the plate. Shut off the air.		
20.	Disconnect the hoses from the mixing tee to the plate, and the plate to the wet side drain.		

DANGER
BE CAREFUL – IF THE COOLER IS IN SERVICE ANY WATER REMAINING IN THE PLATE WILL BE HEATED TO THE BOILING POINT!

21.	Repeat the procedure on the next plate.		

BULKFLOW COOLER PLATE FLUSHING

BULKFLOW COOLER PLATE FLUSHING SCHEMATIC



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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PURGING THE AMMONIA SYSTEM FROM THE AMMONIA SUPPLY PUMPS TO THE PLANT

Granulation "A" Operator-02
8/10/05
Reviewed Date: 8/10/05
Reviewed By: Willie Martinez and Mike Skinner

Objective: Provide operating personnel with step-by-step instruction on how to Purging The Ammonia System From The Ammonia Supply Pumps To The Plant.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Locks, tags and wrenches.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required.	• Exposure to ammonia.	• The scrubber system must be in operation to perform this task.

TASKS:

1. Opening and closing valves.
2. Taking out plugs.

Steps		Key Points	PPE/Hazards
1.	Close double block under sphere. (To be blocked before emergency shut off).	"C" operator will perform this task.	
2.	Open the ammonia valve to the granulator and dryer scrubber by the automatic valve. (3" globe valve).	"B" operator will perform this task.	
3.	Open the ammonia valve to the granulator scrubber. (2" ball valve)	"B" operator will perform this task.	
4.	Open the ammonia valve to the dryer scrubber. (2" ball valve)	"B" operator will perform this task.	
5.	Open the ammonia valve to the preneutralizer. (8" globe valve)	"B" operator will perform this task.	
6.	Verify both valves to the ammonia vaporizer are open.	"A" operator will perform this task.	
7.	De-pressurize the line from the ammonia feed pump. When the line is de-pressurized, put the steam hose on the bleed line on the discharge side of the supply pump.	"C" operator will perform this task.	
8.	Open the steam valve to the hose.	"C" operator will perform this task.	
9.	Open the bleed valve on the discharge side of the supply pump where the steam hose is connected.	"C" operator will perform this task.	
10.	Let the ammonia system purge for approximately an hour.		
11.	Ensure bleed valve is open on double block and bleed.		
12.	Open the ammonia valve to the Pipe Cross. (6" globe valve)	"B" operator will perform this task.	
13.	Open the drain valve on the bottom of the Pipe Cross. (3" plug valve)	"B" operator will perform this task.	
14.	Open the ammonia vaporizer drain valve. (1" globe valve)	"B" operator will perform this task.	
15.	Close the ammonia valves to the preneutralizer tank ammonia spargers. 2 ea. (4" globe valves)	"B" operator will perform this task.	

Steps		Key Points	PPE/Hazards
16.	Open the 2-bleed valves on the ammonia line to the granulator.	"B" operator will perform this task.	
17.	Open the bleed valve on the down leg by the slurry sample valve. (1/2" ball valve)	"B" operator will perform this task.	
18.	Open the bleed valves on the ammonia line to the preneutralizer. (1/2" gate valves)	"B" operator will perform this task.	
19.	Open the 2 bleed valve on the ammonia line to the pipe cross reactor. (1/2 globe valves)	"B" operator will perform this task.	
20.	After the steam starts coming out of the bleed pots, steam for approximately 1 hour.		
21.	After the line has finished purging, close the steam valve and disconnect the hose.	"C" operator will perform this task.	
22.	Hook up air hose to Ammonia line to purge with air to remove all condensate buildup from steam purging.	Purge with air for 4-6 hours.	
23.	After the Air Purge is complete all bleed valves should remain open.		
24.	Prior to bringing Ammonia line into service, Insure all bleeds are closed.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

MONITORING THE UPSTAIRS EQUIPMENT

Granulation "B" Operator-01
4/01/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Monitor The Upstairs Equipment.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves		

• **Hearing protection as required.**		

TASKS:

1. Checking equipment.

Steps	Key Points	PPE/Hazards

NOTE

THE "B" OPERATOR IS RESPONSIBLE FOR CLEANING ALL OF THE UPPER FLOOR DECKS

NOTE

CHECK ALL MOTORS AND GEARBOXES FOR ABNORMAL NOISES AND VIBRATION, IF ANY DEFECTS OR PROBLEMS ARE FOUND WITH THE EQUIPMENT WHILE DOING THE ROUNDS, IMMEDIATELY REPORT THEM TO THE "A" OPERATOR

1.	Check the primary elevator motor, 13-belt alignment, check key way on shaft, gearbox for oil level and check for loose or broken parts.	Check the oil level on the primary elevator gearbox. Verify that the air is blowing on the bearings.	
2.	Check to see if the transfer conveyor is training correctly also check the belt spice for any defects.	If it is riding on one side or the other or the belt splice has a defect report it to the "A" operator.	
3.	Check the splitter chute coming off the transfer conveyor.	If there are chunks blocking them and can safely be removed, remove them.	
4.	Check the #70 screw motor and gearbox.	If the gearbox needs oil or the motor has abnormal noise or vibration, report it to the "A" operator.	

Steps		Key Points	PPE/Hazards
5.	Check each individual screen (4) to see if there are any chunks in them and if there are any holes in the screens.	If the chunks can be safely removed, remove them. If there are any defect in the screens or screen drag report them the "A" operator	
6.	Check the #37 belt to see if it is training correctly also check the belt splice to see if there is any problems with it.		
7.	Check the cage mills for any abnormal vibrations or noise also check the bearing to see if they are too hot.	If there are abnormal vibrations the bar may need to be cleaned. If the bearing are too hot report it to the "A" operator	
8.	Check the Product weigh belt to see that it is training correctly.		
9.	Check the bulk flow cooler feed belt to see if it is training correctly also check the belt spice for any defects.		
10.	Check the bulk flow cooler air blow for abnormal noise and vibration also the discharge air pressure. Check the bearing temperature (normal operating range for the bearing is 140° to 180° F.).	If the discharge air pressure is below 3.5 psi and the inlet valve is open fully, notify the "A" operator. If the bearing temperatures are above 200° F. notify the "A" operator.	
11.	Check the #1 drag flight motor and gearbox for abnormal noise and vibration also check the grizzly at the end of the drag for chunks.	If there are chunks on the grizzly and can safely be remove, remove them.	
12.	Check the #2 drag flight motor and gearbox for abnormal noise and vibration also check the grizzly at the end of the drag for chunks.	If there are chunks on the grizzly and can safely be remove, remove them.	

Steps		Key Points	PPE/Hazards
13.	Check the fines bin to verify the level and that the fines or reclaim is flowing; check the motor and gearbox for abnormal noise and vibration.	If the level in the fines bin is low call the shipping department and ask the to send more over.	
14.	Check for leaking acid lines when getting samples from the incoming acid lines.		
15.	Check for leaks around the granulator and dryer scrubbers.		
16.	Check for leaks in the acid, ammonia and water lines when getting scrubber acid samples.		
17.	Check the granulator gearbox oil level and the oil drip barrel level for the drive chain.	Verify that the drive chain is get oil from the drip barrel.	
18.	Check the recycle elevator motor and gearbox.	Verify that the air is blowing on the bearings	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE GRANULATOR SCRUBBER

Granulation "C" Operator-01
03/03/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Granulator Scrubber.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and a Confined Space Entry Permit.

Tools and Equipment: Air monitor, shovel, bar, double jack, chain ladder, running water hose, and wrenches.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Face shield • Work gloves • Rubber gloves • Hearing protection as required • Tyvex suit as required	• Watch for trapped position. • Watch for poor body position. • Watch for poor footing. • Watch for ammonia presence.	

TASKS:

1. Fill out a confined space entry permit.
2. Close and open valves.
3. Remove and replace the blank.
4. Open and close the man way.

Steps	Key Points	PPE/Hazards

NOTE

THE GRANULATOR SCRUBBER SYSTEM MUST BE DOWN TO PREFORM THIS TASK

1.	Verify that the granulator scrubber system has been shut down.	Check with a qualified operator.	
2.	Lock out the switchgear on the granulator fan.	Verify that all the motors that are locked out will not start. Check with a qualified operator.	
3.	Lock out the switchgear on the granulator scrubber circulation pump.		

NOTE

IF THE GRANULATOR SCRUBBER PUMP TANK HAS NOT BEEN DRAINED, AND THE CIRCULATION LINE CAN'T BE DRAINED, THEN THE VALVES ON THE CIRCULATION LINE WILL HAVE TO BE CLOSED AND LOCKED OUT

4.	If necessary close and lock out the valves on the granulator scrubber circulation line to the granulator scrubber and to the granulator duct.		
5.	Open the drain valve on the suction side of the granulator scrubber circulation pump and drain the circulation line.		
6.	Lock out the ammonia vapor to the granulator scrubber valve.		
7.	Lock out the steam valve going to the top of the preneutralize tank.		
8.	Lock out steam valve going to the preneutralizer tank ammonia spargers.		

Steps		Key Points	PPE/Hazards
9.	Lock out the ammonia vapor valve going the preneutralizer ammonia spargers.		
10.	Flag off the area around the bottom of the granulator scrubber using DANGER DO NOT ENTER flagging and tag stating that there is falling material.		
11.	Remove the blank on the bottom of the granulator scrubber seal pot and drain the remainder of the scrubber liquor.	Use wrenches to remove the bolts holding the blank on. Watch for pinch points. Watch for poor body position. Watch for splashing scrubber liquor.	
12.	Open the man way and monitor the air.		

CAUTION

IF THE ATMOSPHERE QUALITY IN SIDE THE GRANULATOR SCRUBBER IS NOT GOOD REPORT IT TO THE "A" OPERATOR OR TO THE SUPERVISOR, DO NOT ENTER THE GRANULATOR SCRUBBER UNTIL IT HAS BEEN CORECTED

13.	Install the chain ladder.	Verify that the chain ladder is secure before climbing into the scrubber.	

NOTE

THE BOTTOM OF THE GRANULATOR SCRUBBER IS A CONE SHAPE AND MAY BE HARD TO STAND ON

14.	Enter the scrubber and remove the build up from the walls and floor.	Watch for poor footing. Watch for falling material. Watch for flying debris. Use the proper tools.	This task requires a safety watchman.

Steps		Key Points	PPE/Hazards
15.	Remove the build up from the walls and floor.	Watch for trapped position.	
16.	Remove the build up from the walls and floor of the ventury.		
17.	Wash down the walls and floor with a water hose.		
18.	After all the build up has been removed and washed from the scrubber, remove all of the tools, ladder and close the man way.		
19.	Replace the blank on the bottom of the granulator scrubber.		
20.	Unlock all of the valves and switchgears.		
21.	Notify the "A" operator that the granulator scrubber is ready to be put in service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE GRANULATOR SCRUBBER DUCT TO THE GRANULATOR FAN

Granulation "C" Operator-01
03/6/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Granulator Scrubber Duct To The Granulator Fan.

Requirements: Must have Department of Transportation training, Process Safety Management training and Procedure Training.

Required Documents: Department of Transportation Certification and Process Safety Certification and a confined space entry permit.

Tools and Equipment: An Air monitors, ladder, short handled shovel, bar and locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety glasses • Safety toe foot wear • Work gloves • Hearing protection as required • Tyvex suit as required • Respirator as required	• Watch for poor footing • Trapped position • Poor body position	

TASKS:

1. Fill out a confined space entry permit
2. Lock out pumps, valves and the granulator fan
3. Monitor the air
4. Install and remove the ladder
5. Open and close the man way
6. Shovel out the build up

Steps		Key Points	PPE/Hazards
1.	Verify that the granulator scrubber system is down.	Check with a qualified operator.	
2.	Verify that the granulator fan is down.		
3.	Lock out and tag the granulator fan.	Have a qualified operator verify that the fan and motors will not start.	
4.	Lock out and tag the granulator scrubber circulation pump.		
5.	Lock out and tag the ammonia valve to the granulator scrubber.		
6.	Lock out and tag the condensate circulation pump.		
7.	Lock out and tag the ammonia valve to the preneutrlizer tank.		
8.	Lock out and tag the steam valve to the top of the preneutralizer tank.		
9.	Lock out and tag the steam to the ammonia sparges in the preneutralizer tank.		
10.	Lock out and tag the ammonia valve to the pipe cross reactor.		
11.	Lock out and tag the steam valve to the pipe cross reactor.		

Steps		Key Points	PPE/Hazards
12.	Open the man way on the out let duct of the fluoride scrubber and monitor the air inside the duct.		

CAUTION

IF THE AIR QUALITY INSIDE THE FLOURIDE SCRUBBER OUT LET DUCT IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPRVISER, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORECTED

13.	If the air quality is good, get inside the duct and remove the build up from the duct, dropping it down the duct to the granulator fan.		
14.	After all of the build up has been removed from the duct, replace the man way cover and secure it.		
15.	Place a ladder under the man way to the granulator scrubber duct and secure it.		
16.	Remove the bolts securing the man way cover in place.		
17.	Open the man way door and monitor the air inside the duct.		

CAUTION

IF THE AIR QUALITY INSIDE THE GRANULATOR SCRUBBER DUCT IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPRVISER, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORECTED

18.	If the air quality is good, climb inside the duct.	Watch for poor footing on the ladder while getting in the duct.	This task requires a safety watchman
19.	Shovel the build up out the man way.	Watch for poor body position. Watch for pinch points.	
20.	If the build up is too hard to shovel use a bar to brake it up and then shovel it out the may way.		
21.	After the build up has been cleaned out of the duct, remove all the tools.		

Steps		Key Points	PPE/Hazards
22.	Climb out of the duct and close the man way door duct.		
23.	Replace the bolts that secure the man way cover.		
24.	Remove the ladder.		
25.	Unlock the fan, circulation pumps and all valves that are locked out for this procedure.		
26.	Notify the "A" operator that the granulator scrubber duct is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

LOADING AN AMMONIA FARM TANK

Granulation "C" Operator-01
03/1/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Load An Ammonia Farm Tank From The Ammonia Sphere.

Requirements: Operators loading ammonia trucks must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certification, Process Safety Management certification and all loading documents must be filled out, log book, and ammonia inventory papers.

Tools and Equipment: Wheel chocks, pipe wrench, brass hammer, crescent wrench, channel locks and caution signs.

PPE	Hazards	Environmental Considerations
• Hardhat • Work gloves • Safety toe foot wear • Full face respirator • Rubber gloves • Saranex suit • Hearing protection as required • Safety glasses	• Watch for pinch points. • Watch for poor body position • Exposure to ammonia	• Ammonia release

TASKS:

1. Set and remove the wheel chocks.
2. Set and remove the caution signs (both front and rear of truck).
3. Do a hose inspection.
4. Hook up and disconnect the hoses to the ammonia farm tank.

Steps	Key Points	PPE/Hazards

CAUTION

THE TRUCK DRIVER MUST STAY IN HIS TRUCK OR COMPLY WITH PPE REGULATIONS

1.	Secure the farm tank by setting the wheel chocks and set the caution signs 20' in front and rear of the truck.	Possible movement of tank.	
2.	Inspect all of the hoses and fittings.	Watch for loose bolts on the hose clamps and any defects in the hoses.	

CAUTION

ALL BLEED OFF VALVES MUST BE CLOSED BEFORE LOADING VALVES CAN BE OPEN

3.	Close all of the pressure bleed off valves on the farm tank and on the unloading station.	Possible exposure to ammonia	Possible ammonia release

DANGER

REMOVE THE FITTING CAPS SLOWLY THERE MAY BE AMMONIA IN THE LINES AND THEY MAY BE UNDER PRESSURE

4.	Remove the caps from the farm tank fittings.	Watch for possible ammonia left in the lines.	Possible ammonia release.

Steps	Key Points	PPE/Hazards

NOTE

THE LOADING OPERATOR MUST BE IN ATTENDANCE WITH THE FARM TANK THE ENTIRE TIME THE HOSES ARE CONNECTED TO THE FARM TANK

5.	Hook up the hoses to the farm tank, (liquid hose to the liquid valve and vapor hose to the vapor valve). Using the **North** liquid line on the loading and unloading station.	Possible exposure to ammonia.	Possible ammonia release.
6.	While opening the liquid ammonia valve, watch the pressure gauge on the liquid line; if the pressure drops below100 psi start the ammonia pump that is not in service.	Opening these valves too fast can shut the plant down. The ammonia pumps start-stop stations are located on the north wall inside the ammonia pump house or on the southeast end of the truck, farm tank loading unloading station.	
7.	Monitor the ammonia going to the farm tank by the level gauge on top of the farm tank		

CAUTION

MAXIMUN WEIGHT ON AN AMMONIA FARM TANK IS 80%

8.	When the level in the farm tank reaches 80%, shut the ammonia pump down.		
9.	Close the vapor and liquid ammonia valves on the loading station.		
10.	Close the vapor and liquid ammonia valves on the ammonia farm tank		

Steps	Key Points	PPE/Hazards

CAUTION

OPEN THE VAPOR AND LIQUID BLEED OFF VALVES SLOWLY-CHECK WIND DIRECTION AND FOR PERSONNEL IN THE AREA

11.	Open the bleed off valves on the loading station and the farm tank.	Open the bleed off valves slowly and check for any personnel in the area.	
12.	After the ammonia pressure has been bled off of the hose, close the valves on the hoses	Watch for possible ammonia left in the ammonia hoses.	Ammonia release

DANGER

LOOSEN FITTINGS SLOWLY, THEY SLILL MAY HAVE SOME AMMONIA LEFT IN THEM AND MAY BE UNDER PRESSURE

13.	Disconnect the hoses from the ammonia farm tank.		
14.	Remove the caution signs and wheel chocks.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PURGING THE AMMONIA SYSTEM INSIDE THE PLANT

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Steam purge the Ammonia System Inside The Granulation Plant.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Pipe wrench or channel locks.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as	• Exposure to ammonia	• The ammonia system must be depressurized to Limit the amount of ammonia released.

required.		

TASKS:

1. Open and closing valves.
2. Removing plugs.

Steps		Key Points	PPE/Hazards
1.	Shut the ammonia pump down.	"A" operator will perform this task.	
2.	Close the ammonia valve to the ammonia vaporizer.	"B" operator will perform this task.	
3.	Open the auto and the valve on the discharge side of the auto controller valve on the ammonia to the dryer and granulator scrubber. (3" globe valve)	"B" operator will perform this task.	
4.	Open the ammonia valve to the dryer scrubber. (2" ball valve).	"B" operator will perform this task.	
5.	Open the ammonia valve to the granulator scrubber. (2" ball valve)	"B" operator will perform this task.	
6.	Open the ammonia vaporizer drain valve. (1" globe valve)	"B" operator will perform this task.	
7.	Open the 125# steam valve to the ammonia sparges to the preneutralizer tank. (11/2" gate valve)	"B" operator will perform this task.	
8.	Let the 125# run for approximately 15 minutes to the preneutralizer tank.		
9.	Open the ammonia to the preneutralizer tank (8" globe valve)	"A" or "B" operator will perform this task.	
10.	Close the ammonia valves to the preneutralizer. 2 ea. (4" globe valves)	"B" operator will perform this task.	
11.	Let the ammonia system purged for approximately 30 min.		
12.	Open the 2-bleed valve on the ammonia line to the granulator.	"B" operator will perform this task.	
13.	Open the bleed valve on the down leg by the slurry sample valve. (1/2" ball valve)	"B" operator will perform this task.	
14.	Open the bleed valves on the ammonia line to the preneutralizer. (1/2" gate valves)	"B" operator will perform this task.	
15.	Open the 2 bleed valve on the ammonia line to the pipe cross reactor. (1/2 globe valves)	"B" operator will perform this task.	
16.	Open the ammonia manual valve to the pipe cross reactor. (8" globe	"B" operator will perform this task.	

	valve)		

Steps		Key Points	PPE/Hazards
17.	Open the automatic valve to the pipe cross reactor.	"A" operator will perform this task. If necessary close back to automatic valve to the pipe cross reactor to force the steam through the rest of the bleed valves.	
18.	After the steam start to come out of all the bleed ports, let the steam purge through the ammonia lines for at least and hour or longer.		
19.	After the ammonia system is clear of ammonia, the 125# steam can be shut off.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

REPLACING THE GRANULATOR RUBBER PANELS

Granulation "C" Operator-01
03/7/03

Objective: Provide operating personnel with step-by-step instruction on how to Replace A Granulator Rubber Panel.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and Confined Space Entry Permit

Tools and Equipment: jackhammer, impact wrench, hand wrench (3/4", aligning bar, impact sockets (3/4", shovel, double jack handle, brick hammer, locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Dust mask. • Hearing protection as required	• Watch for overhead obstructions • Watch for poor body position • Watch for poor footing • Watch for trip hazards	

TASKS:

1. Lock out and unlock valves and switch gear.
2. Cleaning, removing and installing strips and panels.

Steps		Key Points	PPE/Hazards
1.	Fill out a confined space entry permit.		
2.	Spot the granulator in the best position to replace the bad rubber panel.	The "A" operator will spot the granulator.	
3.	Place a double jack handle between the granulator bull gear and the drive gear on both sides to prevent the granulator from moving.		
4.	Lock out the granulator switchgear.	Verify that the granulator motor will not start.	
5.	Lock out the ammonia valve to the pipe cross reactor.		
6.	Lock out the 250# steam valve to the pipe cross reactor.		
7.	Lock out the slurry automatic valve to the pipe cross reactor.		
8.	Place the ladder on the lip of the granulator rotating grizzly.	Verify that the hooks on the ladder are secure on the lip of the rotating grizzly.	
9.	Monitor the air quality inside the granulator.		

CAUTION

IF THE AIR QUALITY INSIDE THE GRANULATOR IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPRVISER, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORECTED

10.	Enter the granulator and clean the build up from the shell and the bolts that secure the rubber panels in place.	Use the proper tools. Watch for overhead obstructions and for falling material.	
11.	Remove the build up from the granulator.		
12.	Install the portable walk ways and hand rails on the north side of the granulator		

Steps		Key Points	PPE/Hazards
13.	Hook up the air hose to the impact wrench.	Use a safety clip to secure the hose to the impact wrench.	
14.	Remove the bolts from the granulator strips.	This tasks requires two operators, one to hold the nut on the out side of the granulator and one to turn the bolts on the inside of the granulator using the impact wrench.	
15.	After all the bolts have been removed from the strips, move them out of the way.	This takes two or more operator to move the strips.	
16.	Remove the bad rubber panel from the granulator.		
17.	Clean out the build up from the granulator shell where the old rubber panel was.		
18.	Clean out the breather holes in the granulator shell.		
19.	Inspect the granulator shell for any broken studs, if there are any studs missing new ones will need to welded on.		
20.	Install a new rubber panel inside the granulator.	Verify that the new rubber panel is the correct size by measuring the old panel.	
21.	Replace the panel strips and install all of the bolts to secure the rubber panel.	This tasks requires two operators, one to put the nut on the bolt and hold it on the out side of the granulator and one to turn the bolts on the inside of the granulator using the impact wrench.	
22.	After all of the bolts have been installed and tightened, remove all of the tools from the granulator.		

Steps		Key Points	PPE/Hazards
23.	Unlock the granulator switchgear and remove the double jack handles from between the granulator bull gear and drive gear.		
24.	Unlock all of the valves that have been locked out.		
25.	Replace all of the tools to their proper place.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

WASHING THE BULK FLOW COOLER

Granulation "C" Operator-01
03/02/03

Objective: Provide operating personnel with step-by-step instruction on how to Wash The Bulk Flow Cooler.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required		

TASKS:

1. Hooking up and disconnecting the steam hoses.
2. Opening and close valves.

Steps		Key Points	PPE/Hazards
1.	Verify that the Bulk Flow Cooler is empty and ready to be put on wash.	The ribbon blender and the #38 belt must be shut down. Check with a qualified operator.	
2.	After verifying that the bulk flow cooler is empty, open the dump gate on the bottom of the cooler.		
3.	Close the slide gate on the air duct from the cooler to the vent bag house duct.		
4.	Hook up the drain hoses on the on the bottom of the bulk flow cooler.	Watch for poor footing.	
5.	Put the floor sump in the drain hole in the containment area on the bottom floor and run the discharge hose over to the wet side of the bottom floor. Then plug the sump pump it in to the electrical out let.		
6.	Hook up the 125# steam hose to the steam port on the wash water header at the top of the bulk flow cooler.	Use a safety clip to secure the hose to the steam port on the wash water line and to the steam supply line.	
7.	Close the return cooling water valve at the top of the bulk flow cooler.		
8.	Open the valves on the wash water supply line to the wash water header and on the wash water header.		

Steps	Key Points	PPE/Hazards

NOTE

AFTER OPENING THE WASH WATER AND STEAM TO THE WASHWATER LINE WATCH FOR DRAIN LINE PLUGGAGE

CAUTION

OPEN AND CLOSE THE STEAM VALVES SLOWLY

9.	Open the steam valve on the wash water header then open the valve on the steam supply line.		
10.	If the drain line plugs, close the steam and wash water valve.		
11.	Disconnect the drain line and remove the blockage.	Watch for poor footing. Watch for poor body position.	
12.	After removing the blockage, reconnect the drain line and open the wash water and steam vales.		
13.	When the cooler is clean, close the wash water valves and the steam valves.		
14.	Close the valve on the cooling water supply line and open the cooling water bypass valve.	Have qualified operator open the cooling water bypass valve.	
15.	Open the vent port on the return water line at the top of the bulk flow cooler.		
16.	Open the drain valve on the bottom water header and let the water drain out of the cooling plates.		
17.	After the cooling water has drained from the cooling plates.		
18.	Hook up the 125# steam to the drain line on the bottom cooling water header and open the steam valve to heat the cooling plates so they will dry.	Use a safety clip to secure the steam hose.	

Steps		Key Points	PPE/Hazards
19.	After the bulk flow cooler is dry, shut the steam valves and disconnect the steam hose.		
20.	Open the slide gate on the air duct from the bulk flow cooler to the vent bag house duct.		
21.	Disconnect the drain hoses put them away.		
22.	Unplug the floor sump.		
23.	Close the bulk flow cooler dump valve.		
24.	Notify the "A" operator that the bulk flow cooler is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE DRYER SCRUBBER

Granulation "C" Operator-01
03/03/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Dryer Scrubber.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and a Confined Space Entry Permit.

Tools and Equipment: air monitor, shovel, bar, double jack, chain ladder, running water hose, and wrenches.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Face shield • Work gloves • Rubber gloves • Hearing protection as required • Tyvex suit as required	• Watch for trapped position. • Watch for poor body position. • Watch for poor footing. • Watch for ammonia presence.	

TASKS:

1. Fill out a confined space entry permit.
2. Close and open valves.
3. Remove and replace the blank.
4. Open and close the man way.

Steps	Key Points	PPE/Hazards

NOTE

THE DRYER SCRUBBER SYSTEM MUST BE DOWN TO PREFORM THIS TASK

1.	Verify that the dryer scrubber system has been shut down.	Check with a qualified operator.	
2.	Lock out the switchgear on the dryer fan.	Verify that all the motors that are locked out will not start. Check with a qualified operator.	
3.	Lock out the vent bag house fan switchgear.		
4.	Lock out the switchgear on the dryer scrubber circulation pump.		

NOTE

IF THE DRYER SCRUBBER PUMP TANK HAS NOT BEEN DRAINED, AND THE CIRCULATION LINE CAN'T BE DRAINED, THEN THE VALVES ON THE CIRCULATION LINE WILL HAVE TO BE CLOSED AND LOCKED OUT

5.	If necessary close and lock out the valve on the dryer scrubber circulation line.		
6.	Open the drain valve on the suction side of the dryer scrubber circulation pump and drain the circulation line.		
7.	Lock out the ammonia vapor to the dryer scrubber valve.		
8.	Flag off the area around the bottom of the dryer scrubber using DANGER DO NOT ENTER flagging.		

	Steps	Key Points	PPE/Hazards
9.	Remove the blank on the bottom of the dryer scrubber seal pot and drain the remainder of the scrubber liquor.	Use wrenches to remove the bolts holding the blank on. Watch for pinch points. Watch for poor body position. Watch for splashing scrubber liquor.	
10.	Open the man way and monitor the air.		

CAUTION

IF THE ATMOSPHERE QUALITY IN SIDE THE DRYER SCRUBBER IS NOT GOOD REPORT IT TO THE "A" OPERATOR OR TO THE SUPERVISOR, DO NOT ENTER THE DRYER SCRUBBER UNTIL IT HAS BEEN CORECTED

11.	Install the chain ladder.	Verify that the chain ladder is secure before climbing into the scrubber.	

NOTE

THE BOTTOM OF THE DRYER SCRUBBER IS A CONE SHAPE AND MAY BE HARD TO STAND ON

12.	Enter the scrubber and remove the build up from the walls and floor.	Watch for poor footing. Watch for falling material. Watch for flying debris. Use the proper tools.	This task requires a safety watchman.
13.	Remove the build up from the walls and floor of the ventury.	Watch for trapped position.	
14.	Wash down the walls and floor with a water hose.		
15.	After all the build up has been removed and washed from the scrubber, remove all of the tools, ladder and close the man way.		

Steps		Key Points	PPE/Hazards
16.	Replace the blank on the bottom of the dryer scrubber.		
17.	Unlock all of the valves and switchgears.		
18.	Notify the "A" operator that the granulator scrubber is ready to be put in service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE DRYER DUCT FROM THE DRYER THROUGH THE DRYER CYCLONES

Granulation "C" Operator-01
02/28/03

Objective: Provide operating personnel with step-by-step instruction on how clean The Dryer Duct From The Dryer To The Dryer Cyclones.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification and a Confined Space Entry permit.

Tools and Equipment: Wrenches, air hose, air lance and safety clips.

Cleaning the dryer Duct from the Dryer Through the Dryer Cyclones

PPE	Hazards	Environmental Considerations
• Hardhat • Safety glasses • Steal toe safety foot wear • Work gloves • Hearing protection as required • Safety Harness	• Watch for poor footing • Watch for poor body position • Watch for pinch points	

TASKS:

1. Fill out an entry permit.
2. Removing bolts from the door.
3. Blow the build up out of the duct.

Steps	Key Points	PPE/Hazards

NOTE

THE PLANT MUST BE DOWN TO PERFORM THIS TASK

1.	Verify that the dryer fan amps are set at desired point.	Check with a qualified operator.	
2.	Verify that that the North and South cyclone screws are running.		
3.	Open the grating sections above the dryer duct door.	Watch for pinch points Watch for poor body position Watch for poor footing	
4.	Remove all of the bolts from the dryer duct door but one corner bolt. (The remaining bolt must be loose)	Wrenches are required.	
5.	Slide the door to one side.		
6.	Hook the air lance to the air.	Use a safety clip to secure the lance to the hose.	

Steps		Key Points	PPE/Hazards
7.	Open the air hose valve and blow the build up down the duct to the cyclones.	The dryer fan, north and south cyclone screws must be running. Check with a qualified operator.	Watch for flying debris.

NOTE

IF BUILDUP REQUIRES ENTRY, THE DRYER WILL NEED TO BE LOCKED OUT PRIOR TO ENTERING DUCT

8.	When the duct is clean, close the valve on the air hose.	There are three open top cyclones inside the duct.	This section of the dryer duct requires a safety watchman. A safety harness and lanyard must be used with a 100% tie off.
9.	Get inside the duct and shovel the build up down into the cyclones openings.		
10.	Put the duct door back in place and replace the bolts.		
11.	Close the sections grating above the dryer duct door.	Watch for pinch points.	
12.	When this section of the duct is finished, move to the duct above the top of the cyclones.		
13.	Remove the bolts on the man way to the top of the cyclone.		

NOTE

THE OPERATOR MUST BE AWARE OF THE OPENINGS ON TOP OF CYCLONES, WHILE GETTING INSIDE AND MOVING AROUND THE DUCT

14.	When finished cleaning the build up from the cyclone section of the duct, remove all of the tools and close the man way.		
15.	Replace the bolts in the man way door.		

	Steps	Key Points	PPE/Hazards
16.	When finished cleaning the dry duct and all man ways are closed and secured, verify that the bottom of the cyclones are not plugged, if they are plugged tap on the sides of the cyclone to remove the build up.		
17.	Notify the "A" operator that the dryer duct is ready for service.		

Training Notes:

1. Must be trained with a qualified operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE DRYER SCRUBBER DUCT TO THE DRYER FAN

GRANULATION "C" Operator-01
03/1/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Dryer Duct From The Scrubber To The Fan.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification and a confined space entry permit.

Tools and Equipment: An air monitor, 3/4" rope, ladder, short handled shovel, bar, locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety glasses • Safety toe foot wear • Work gloves • Hearing protection as required • Tyvex suit as required	• Watch for poor footing • Trapped position • Poor body position	

Cleaning the Dryer Duct from the Dryer Scrubber to the dryer Fan

TASKS:

1. Fill out a confined space entry permit
2. Lock out the pump, valve dryer fan
3. Monitor the air
4. Place and remove the ladder
5. Open and close the man way
6. Shovel out the build up

Steps		Key Points	PPE/Hazards
1.	Verify that the dryer scrubber system is down.	Check with a qualified operator.	
2.	Verify that the dryer fan is down.		
3.	Lock and tag out the dryer fan switchgear.		
4.	Lock out and tag the dryer scrubber circulation pump.		
5.	Lock out and tag the water valve to the dryer scrubber duct.		
6.	Place a ladder on the side of the dryer scrubber and climb on top of the dryer scrubber.		
7.	Remove the bolts that secure the water spray and remove the flange.		
8.	Drop a 3/4" rope down through the flange opening to the dryer scrubber man way.		
9.	Tie the rope to the chain ladder and pull the chain ladder up to the top of the dryer scrubber out let duct and tie the rope off.		
10.	Monitor the air inside the dryer duct.		

CAUTION

IF THE AIR QUALITY INSIDE THE DRYER SCRUBBER IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPRVISER, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORECTED

11.	If the air quality is good, climb the ladder up to the out let duct and clean the build up out, dropping it down to the bottom of the duct going to the dryer fan.		A safety harness and lanyard must be used with a 100% tie off

Steps		Key Points	PPE/Hazards
12.	After all the build up has been removed, climb back down to the man way, lower the chain ladder and remove it from the dryer scrubber.		
13.	Place a ladder under the man way to the dryer duct and secure it.		
14.	Open the man way.	Watch for poor footing.	
15.	Monitor the air inside the dryer duct.		

CAUTION

IF THE AIR QUALITY INSIDE THE DRYER SCRUBBER DUCT IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPRVISER, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORECTED .

16.	If the air quality is good, climb inside the duct.	Watch for poor footing on the ladder while getting in the duct.	A safety watchman is required for this task.
17.	Shovel the build up out the man way.	Watch for poor body position. Watch for pinch points.	
18.	If the build up is too hard to shovel use a bar to brake it up and then shovel it out the may way.		
19.	After the build up has been cleaned out, remove all the tools.		
20.	Climb out of the duct and close the man way duct.		
21.	Unlock the dryer fan, circulation pump switchgears and the water valve.		
22.	Notify the "A" operator that the dryer fan is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PURGING THE AMMONIA SPHERE

Granulation "A"Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Purge The Ammonia Sphere.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as	• Exposure to ammonia	• Ammonia release

required.		

TASKS:

1. Opening and closing valves.
2. Hooking up and unhooking hoses.

Steps		Key Points	PPE/Hazards
1.	Have the switch engine crew spot an empty ammonia car.		
2.	Empty ammonia from sphere to railcar.	"C" operator will perform this task. Refer to the procedure Loading an ammonia railcar.	
3.	Hook the ammonia vapor hose from the truck station to the white pipe on the North side of the ammonia sphere approx. 4' tall going to plant.	"C" operator will perform this task.	
4.	Close the bleed valve on the truck vapor line.	"C" operator will perform this task.	
5.	Open the truck vapor line main valve.	"C" operator will perform this task.	
6.	Open the valve on the vapor hose.	"C" operator will perform this task.	
7.	Remove the lock and chain from the line coming into the plant in the southeast corner of the building above the stairway coming up from the east of the preneut tank	"A" operator will perform this task.	
8.	Close the valve coming off the ammonia vapor line to the preneutralizer tank and going to the vapor line to the Granulator and Dryer scrubbers.	"A" operator will perform this task.	
9.	Open the valve from incoming line to vapor line to Granulator and Dryer Scrubbers. (Valve that chain was taken off).	"A" operator will perform this task.	
10.	Open the valves on both sides of the auto valve.	"A" operator will perform this task.	
11.	Open the vapor ammonia auto valve to the dryer and granulator scrubbers (on the DCS).	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
12.	Open the vapor ammonia valve to the dryer scrubber.	"B" operator will perform this task.	
13.	Open the valve on the vapor line to the granulator scrubber.	"B" operator will perform this task.	

NOTE

THIS SHOULD ALLOW THE AMMONIA VAPORS AND STEAM TO BLEED TO THE SCRUBBER SYSTEM

14.	Bleed the ammonia vapors to the scrubber system until sphere pressure is as low as it will get (5 or 10# maximum).		
15.	Close the pump suction and discharge valves to the ammonia feed pumps.	"C" operator will perform this task.	
16.	Open the bleed valves to depressurize the ammonia feed pumps.	"C" operator will perform this task.	
17.	Open pump bypass line and close valves to preneutralizer tank spargers.	"C" operator will perform this task.	
18.	Verify that the liquid ammonia valves are open from ammonia vaporizer to the ammonia sphere.	"A" operator will perform this task.	
19.	Open the 125# steam to the ammonia line to allow the steam to flow into bottom of the ammonia sphere, purging the ammonia vapors to the Dryer and Granulator scrubbers.	"C" operator will perform this task.	
20.	After the ammonia sphere has purged for at least 12 hours, shut the 125# steam off and let the ammonia sphere start to depressurize.		
21.	Open the vent valve on top of the ammonia sphere to finish depressurizing the ammonia sphere.	"A" operator will perform this task.	
22.	Hook up air hose to Ammonia line to the Sphere to purge with air to remove all condensate buildup from steam purging.	Purge with air for 4-6 hours.	
23.	After the Air Purge is complete all bleed valves should remain open.		

24.	Prior to bringing Ammonia Sphere and lines into service, Insure all bleeds are closed.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

Accessing and Using the Stack Sampling Platform

GRAN-Stack Sampling Platform Access-01
5/10/05

Objective: To explain all the steps and hazards in Accessing and using the Sampling Platform on the Granulation exhaust stack.

PPE	Hazards	Environmental Considerations
Safety glasses, gloves, hardhat, steel toed shoes, respirator with ammonia cartridges.	Working at an extreme height on the stack platform, there are handrails, (use caution), falling hazard, and anhydrous ammonia exposure.	Could encounter anhydrous ammonia at times from the granulation plant.

TASKS:

1. Climb the ladders to get to the sampling platform on the exhaust stack at Granulation.
2. Use the sampling platform and return to the granulation control room.

NOTE

Control Room check in is required in all areas of the facility.

Step		Key Points	PPE/Hazards
1.	Go into the Granulation plant to gain access to the stack.	**Check in at the control room to let the operators know you are in the area.**	**Hardhat, safety glasses, steel-toed shoes, gloves. A properly fitted respirator with Ammonia cartridges. Hearing Protection is required when the plant is running.**

CAUTION

If the ladders are ice covered or inaccessible take appropriate action to remove ice or obstacles before proceeding up the ladders.

DANGER

If there is any physical damage to the ladders that would make them unstable, do not continue. Return to the control room and report the incident to the area supervisor immediately.

Step		Key Points	PPE/Hazards
2.	Carefully continue up the ladders to each platform.	**Keep at least three points of contact on the ladder at all times.**	**Where gloves to insure a good grip. Slipping and or falling are hazards.**

DANGER

While climbing if you encounter a very strong ammonia smell go immediately down to the next level and put on your respirator.

Step		Key Points	PPE/Hazards
3.	Continue up the ladders to each platform.	**Keep at least three points of contact on the ladder at all times.**	**Wear gloves to insure a good grip. Slipping and or falling are hazards.**

DANGER

While wearing your respirator and continuing, if you again encounter a strong ammonia smell or irritation of the eyes, immediately leave the area and inform the area supervisor. Do not return until the area is cleared.

Step		Key Points	PPE/Hazards
4.	Continue to the sampling platform (TOP) platform of the stack.	**Keep at least three points of contact on the ladder at all times.**	**Wear gloves to insure a good grip. Slipping and or falling are hazards.**

DANGER

While on the sampling platform, if you encounter a strong ammonia smell or irritation of the eyes, put on your respirator. If this does not remedy the problem immediately leave the area and inform the area supervisor. Do not return until the area is cleared.

Steps		Key Points	PPE/Hazards
5.	Finish the work at the sampling platform.	**Handrails and toe boards are around the platform. Use caution when working around edges of the platform.**	**Hardhat safety glasses and steel toed shoes. Properly fitted respirator. Slipping and or falling are hazards.**
6.	Climb down the ladders and go back to the control room to check out of the area.	**Keep at least three points of contact on the ladders at all times.**	**Wear gloves to insure a good grip. Slipping and or falling are hazards.**

Training Notes:

1. Contractors are required to have contractor orientation, as well as review and sign SOP.
2. Visitor orientation.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

WASHING THE PIPE CROSS REACTOR

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Put The Pie Cross Reactor On Wash.

Requirements Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training. Confined Space permit and safety watchman available.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Wrenches or air impact

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required.	• Exposure to ammonia • Falling material • Extreme heat • Pinch Points	

• **Respirator**		

TASKS:

1. Removing the faceplates.
2. Hooking up wash water discharge hose
3. Installing the faceplates.

Steps		Key Points	PPE/Hazards
1.	Lock out the slurry to the Pipe Cross Reactor auto valve.	"A" operator will perform this task.	
2.	Lock out the (6" globe valve) ammonia to the Pipe Cross Reactor.	"A" operator will perform this task.	
3.	Lock out the (4" gate valve) on the on the discharge side on the 250# steam auto valve.	"A" operator will perform this task.	
4.	Lock out the granulator switchgear.	"A" operator will perform this task.	

NOTE

PLACE THE LADDER ON THE EDGE OF THE ROTATING GRIZZLE AND VERIFY THAT THE HOOKS ON THE LADDER ARE SECURED TO THE EDGE OF THE ROTATING GRIZZLY.

CAUTION

WATCH FOR ANY OVERHEAD MATERIAL THAT MAY FALL, ALSO WATCH THE LOW HEADROOM.

5.	Climb inside the granulator watching for overhead build up.	"A" operator will perform this task.	Watch for the low headroom. Watch for overhead build up that may fall.
6.	Remove the faceplates from the Pipe Cross Reactor discharge nipples.	"A" operator will perform this task.	Watch for hot slurry left in the discharge nipples.
7.	Install the blanks on the head end and center discharge nipples.	"A" operator will perform this task.	
8.	Install the wash water hose connection on the tail end nipple.	"A" operator will perform this task.	

Steps		Key Points	PPE/Hazards
9.	Hook up the wash water discharge hose.	"A" operator will perform this task.	
10.	Open the valve (11/2" ball valve) on the discharge connection.	"A" operator will perform this task.	
11.	Climb out of granulator.	Watch for slip and fall hazards.	
12.	Start the wash water to the Pipe Cross Reactor.	"A" operator will perform this task.	
13.	After the Pipe Cross Reactor is finished washing, shut the wash water off.	"A" operator will perform this task.	
14.	Remove the discharge hose.	"A" operator will perform this task.	
15.	Remove the blanks and reinstall the face plants on the Pipe Cross Reactor	"A" operator will perform this task.	

NOTE

REMOVE THE LADDER FROM THE GRANULATOR.

16.	Remove all lockouts.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

UNLOADING A DUST SUPPRESSANT TRUCK

Granulation "C" Operatpr-01
02/24/03

Objective: Provide operating personnel with step-by-step instruction on how to Unload A Dust Suppressant Truck.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Reinforced steam hose, safety clips, air hose and a pressure regulator.

PPE	Hazards	Environmental Considerations
• Hardhat. • Safety toe foot wear. • Safety glasses. • Work gloves. • Hearing protection as required.	• Verify that the steam hose is reinforced. • Verify that all of the fittings are secure. • Open all the valves slowly.	• Dust suppressant spillage.

TASKS:

1. Hook up and disconnect steam hose.
2. Hook up and disconnect air hose with a pressure regulator.
3. Open and close the valves.

Steps		Key Points	PPE/Hazards
1.	Hook up the steam hose to the unloading line.	Verify that the steam hose is wire reinforced.	

CAUTION

OPEN THE STEAM VALVE SLOWLY

2.	Open the steam valve slowly and let the steam run until steam comes out the vent on top of the storage tank.	Open the steam valve slowly.	

CAUTION

STAND CLEAR WHILE DEPRESSURIZING THE STEAM HOSE AND UNLOADING LINE

3.	Close the steam valve, open the bleed valve and depressurize the steam hose and the unloading line.	Stand clear while depressurizing the steam line.	Verify that the steam hose and line are depressurized before disconnecting the steam hose.
4.	Hook up the unloading hose to the bottom of the truck and to the unloading line.	Verify that the cam-lock fittings are clean. Verify that the cam-lock fittings are secure.	
5.	Hook up the air hose to the pressure regulator and the pressure regulator to the top of the truck.	Verify that the pressure regulator is set for 35#. Watch for poor footing.	
6.	Open the valves on the bottom of the truck and on the unloading line to the storage tank.	Open the valves slowly.	Watch for leakage around the fittings and the valves. The product runs approx. 200 degrees.
7.	When the truck is empty, shut the air off and depressurize the airline.		

Steps		Key Points	PPE/Hazards
8.	Disconnect the air hose and air regulator.	Verify that the air hose is depressurized.	
9.	Close the valves on the bottom of the truck and on the unloading line.		
10.	Hook up the steam hose to the unloading line.		

CAUTION

OPEN THE STEAM VALVE SLOWLY

11.	Open the steam valve and steam the dust suppressant out of the unloading line.	Open the steam valve slowly.	
12.	Let the steam run until steam comes out the vent on top of the storage tank.		

CAUTION

STAND CLEAR WHILE DEPRESSURIZING THE STEAM HOSE AND UNLOADING LINE

13.	Close the steam hose valve, open the bleed valve and depressurize the steam hose and unloading line.		
14.	Disconnect the steam hose.	Verify that the steam hose and the unloading line is depressurized.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE PRENEUTRALIZER TANK

Granulation "C" Operator-01
03/7/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Preneutralizer Tank.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and Confined Space Entry Permit.

Tools and Equipment: Wrenches, shovel, broom, water hose, air monitor, locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required • Safety harness • Respirator as required • Tyvex suit as required	• Watch for trapped position • Watch for poor body position • Watch for poor footing • Watch for ammonia presence	

TASKS:

1. Fill out a confined space entry permit.
2. Lock and unlock switchgears and valves.
3. Open and close the man way.
4. Monitor the air.
5. Clean out the build up.

Steps	Key Points	PPE/Hazards

NOTE

THE PRENEUTRALIZER TANK MUST BE EMPTY TO PERFORM THIS TASK

1.	Verify that the preneutralizer tank is empty.	Check with a qualified operator.	
2.	Fill out a confined space entry permit.		
3.	Lock out and tag the east and west pipe reactor feed pump switchgears.	Verify that all locked out motors will not start.	
4.	Lock out the north and south slurry circulation pump switchgears.		
5.	Lock out the ammonia valve to the preneutralizer tank.		
6.	Lock out the 35# start up steam valve on top of the preneutralizer tank.		
7.	Lock out the 125# steam valve to the preneutralizer tank ammonia sparges.		
8.	Lock out the scrubber acid valve to the preneutralizer tank.		
9.	Lock out the feed acid valve to the preneutralizer tank.		
10.	Lock out the sulfuric acid valve to the preneutralizer tank.		
11.	Lock out the water valve to the preneutralizer tank.		
12.	Remove the bolts that secure the man way to the preneutralizer tank.		
13.	Open the man way door.	Watch for pinch points and poor body position.	

Steps		Key Points	PPE/Hazards
14.	Monitor the air quality inside the preneutralizer tank.		

CAUTION

IF THE AIR QUALITY INSIDE THE PRENEUTRALIZER TANK IS NOT GOOD, NOTIFY THE "A" OPERATOR OR THE SUPRVISER, DO NOT ENTER UNTIL THE AIR QUALITY HAS BEEN CORECTED

15.	Climb into the preneutralizer tank.		
16.	Remove the build up from the walls and floor of the preneutralizer tank.	Use the proper tools. Watch for falling material.	
17.	Wash down the walls and floor with a water hose.		
18.	Inspect all of the bolts and joints on the ammonia sparger supports.	Check for loose or broken bolts. Report any defects to the "A" operator or supervisor.	
19.	After all of the build up and repairs have made, Inspect the seal of the man way door. If required use a gortex sealant to create a gasket. Close the man way door.		
20.	Unlock all the switchgears and valves.		
21.	Notify the "A" operator that the preneutralizer tank is ready to be put in service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE GRANULATOR DUCT FROM THE HEAD END OF THE DUCT TO THE GRANULATOR SCRUBBER

Granulation "C" Operator-01
02/25/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Granulator Duct.

Requirements: Must have Department of Transportation training, Process Safety Management training and Procedure Training.

Required Documents: Department of Transportation Certification, Process Safety Certification and Confined Space Entry Permit.

Tools and Equipment: Shovel, bar, jackhammer, locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required • Safety harness • Respirator • Tyvex suit as required	• Watch for trapped position. • Watch for poor body position. • Watch for poor footing. • Watch for ammonia presence.	

Cleaning The Granulator Duct From The Head End Of The Duct To The Granulator Scrubber

TASKS:

1. Fill a confined space entry permit.
2. Lock out the scrubber acid to the granulator duct valve.
3. Open the granulator duct doors.
4. Remove the built up.

Steps	Key Points	PPE/Hazards

NOTE

THE PLANT MUST BE DOWN TO PERFORM THIS TASK

1.	Lock out the scrubber acid valve to the granulator duct.		
2.	Open the required doors on the granulator duct to clean out the head end of the duct.	Watch for poor footing. Watch for poor body position.	
3.	Get inside the granulator duct and clean out the head end build up, pushing or shoveling it to granulator grizzly.	Watch for poor footing. Watch for poor body position.	A safety harness with a D ring must be used but the operator does not have to be tied off.

NOTE

THE BUID UP IN THE DUCT MAY TO HARD TO SHOVEL AND MAY REQUIRE THE USE OF A JACKHAMMER.

CAUTION

VERIFY THAT THERE IS NOBODY BELOW THE GRANULATOR DUCT WORKING AROUND THE GRANULATOR GRIZZLY AND THAT THE DOORS ARE CLOSED ON THE DISCHARE END OF THE GRANULATOR

4.	Close the doors on the discharge end of the granulator.		
5.	If the build up is too hard to shovel, use a jackhammer to break it up and then push it or shovel it down to the granulator grizzly.	Watch for poor footing. Watch for poor body position.	Watch for any operators around the granulator grizzly.
6.	After the head end of the granulator duct is cleaned, check the rest of the duct.		

Cleaning The Granulator Duct From The Head End Of The Duct To The Granulator Scrubber

Steps		Key Points	PPE/Hazards
7.	If there is build up in the rest of the duct, open the required doors.	Watch for poor footing. Watch for poor body position.	If opening the doors past the discharge end of the preneutralizer tank duct on the granulator scrubber side, there may be ammonia present.
8.	Get inside the granulator duct and shovel or push the build to the granulator scrubber.	Watch for poor footing. Watch for poor body position. Watch for a trapped position.	
9.	If the build up is too hard to shovel a jackhammer may be required to break up the build up, then shovel or push it to the granulator scrubber.		
10.	After cleaning all the build up from the granulator duct, close all open doors.		
11.	Unlock the scrubber acid to the granulator duct valve.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE VENT BAG HOUSE DUCT

Granulation "C" Operator-01
02/25/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Vent Bag House Duct.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification and Confined Space Entry Permit.

Tools and Equipment: Shovel, radio, lock and tag and a flashlight.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Dust mask • Hearing protection as required • Safety harness	• Watch for trapped position. • Watch for poor body position.	

TASKS:

1. Fill out a confined space entry permit.
2. Open and close the doors.
3. Lock out the switchgear for the vent bag house fan.
4. Remove build up from the duct.
5. Unlock the switchgear for the vent bag house fan.

Steps	Key Points	PPE/Hazards

NOTE

THE PLANT MUST BE DOWN TO PERFORM THIS TASK

1.	Have a qualified operator shut the vent bag house down.		
2.	Lift the grating up and open the door to the vent bag house duct.		
3.	Have a qualified operator start the vent bag house fan to get rid of as much build up as possible.	Use a radio for communication. Must have the bag house screw running and the air on the vibratory on the screw discharge chute.	
4.	Have a qualified operator shut the vent bag house fan down.		
5.	Lock out the vent bag house fan switchgear.		
6.	Have a qualified operator verify that the vent bag house fan will not start.	Must use a safety watchman.	
7.	Get in the vent bag house duct and visually inspect the duct.	Flashlight is required	
8.	Open the slide gate on the duct that goes to the #73 screw.	Watch for pinch points Watch poor body position.	
9.	Have a qualified operator start the #73 screw.		

Steps	Key Points	PPE/Hazards

CAUTION

THE OPERATOR MUST BE AWARE OF THE DUCT GOING TO THE #73 SCREW WHILE MOVING AROUND IN THE VENT BAG HOUSE DUCT.

10.	Enter the vent bag house duct.		A safety harness with a D ring must be used but the operator does not have to be tied off.
11.	Clean out the remaining build up by pushing it down to the duct that goes to the #73 screw with a shovel.	Be cautious around the duct going to the #73 screw.	The duct going to the #73 screw creates a fall hazard.
12.	After cleaning the upper part of the duct, clean out the build up form the lower part of the duct by pushing the build up back to the duct that goes to the #1 drag flight or to the duct that goes to the #73 screw.		
13.	When finished cleaning the vent bag house duct, put the door and grating back in place.	Watch for pinch point. Watch for poor body position.	
14.	Close the slide gate on the duct that goes to the #73 screw.		
15.	Unlock the vent bag house fan.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE SOUTH SLURRY CIRCULATION PUMP

Granulation "C" Operator-01
2/25/03

Objective: Provide the operating personnel with step-by-step instruction on how to Switch To The South Slurry Circulation Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Valve wrench, pipe wrench, rod and a radio.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Rubber gloves • Face shield • Hearing protection as required • Saranex suit	• Watch for pinch points. • Watch for poor footing. • Watch for splashing hot slurry. • Watch for overhead obstructions.	

TASKS:

1. Opening and closing the valves.
2. Starting and shutting down the pumps.
3. Rod out drain line.

Steps		Key Points	PPE/Hazards
1.	Close the steam port valve on the suction side of the south slurry circulation pump.	Watch for pinch points. Watch for poor footing. Watch for overhead lines.	
2.	Close the steam port valve on the discharge side of the south slurry circulation pump cross over line.		
3.	Verify that the packing water is set at the desired flow rate.		
4.	Open the south slurry circulation pump suction valve.		
5.	Shut the north slurry circulation pump down.		
6.	Close the north slurry circulation pump discharge valve.		
7.	Open the south slurry circulation pump discharge valve.		

NOTE

AFTER STARTING THE PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

8.	Start the south slurry circulation pump.		
9.	When the slurry flow has been established the "A" operator will let the operator know.	Radios will be used for communication.	
10.	Close the north slurry circulation pump suction valve.		

Steps	Key Points	PPE/Hazards

CAUTION

SLURRY TEMP RUNS ABOUT 216° F.

11.	Open the drain valve on the suction side of the north slurry circulation pump.	Open the valve slowly. Stand clear.	Watch for splashing hot slurry.
12.	Rod out the drain line if it is plugged.	The drain valve may be plugged and may need to be cleaned out. Stand clear.	
13.	Open the valve on the discharge side of the north pump.	Open the valve slowly. Stand clear.	
14.	Rod out the steam port line if it is plugged.	The steam port line may be plugged.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE NORTH SLURRY CIRCULATION PUMP

Granulation "C" Operator-01
02/25/03

Objective: Provide the operating personnel with step-by-step instruction on how to Switch To The North Slurry Circulation Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Valve wrench, pipe wrench, rod and a radio.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Rubber gloves • Face shield • Hearing protection as required	• Watch for pinch points • Watch for poor footing • Watch for splashing hot slurry • Watch for overhead obstructions	

TASKS:

1. Opening and closing the valves.
2. Starting and shutting down the pumps.
3. Rod out drain line.

Steps		Key Points	PPE/Hazards
1.	Close the steam port valve on the suction side of the north pump.		
2.	Close the drain valve on the suction side of the north pump.	Watch for pinch points. Watch for poor footing. Watch for overhead obstructions.	
3.	Close the steam port valve on the discharge side of the north pump.		
4.	Verify that the packing water is set at the desired flow rate.		
5.	Shut the south pump down.		
6.	Close the south pump discharge valve.		
7.	Open the north pump discharge valve.		

NOTE

AFTER STARTING THE PUMP CHECK FOR ABNORMAL VIBRATION AND NOISES

8.	Start the north slurry circulation pump		
9.	Open the north pump suction valve.		
10.	When the slurry flow has been established the "A" operator will let the operator know.	Radios will be used for communication.	

Steps		Key Points	PPE/Hazards
11.	Close the south slurry circulation pump suction valve.		

CAUTION

SLURRY TEMP RUNS ABOUT 216° F.

12.	Open the steam port valve on the suction side of the south slurry circulation pump and drain the slurry out of the line.	Open the valve slowly. Stand clear.	Watch for splashing hot slurry. Stand clear.
13.	Rod out the steam port if it is plugged.	The drain valve may be plugged. Stand clear.	
14.	Open the steam port valve on the discharge side of the south slurry circulation pump (on the cross over line).		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PURGING THE AMMONIA SUPPLY PUMPS WITH STEAM

Granulation "C" Operator-01
03/2/03

Objective: Provide operating personnel with step-by-step instruction on how to Purge The Ammonia Supply Pumps With Steam.

Requirements: Operator must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certification and Process Safety Management certification,

Tools and Equipment: Valve wrench, wire reinforced steam hose and a lock and tag.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety glasses • Work gloves • Safety toe foot wear • Hearing protection as required • Respirator	• Watch for poor body	• Possible ammonia release

TASKS:

1. Open and close the valves.
2. Hook up and disconnect the steam and ammonia vapor hoses.
3. Depressurize and pressure up the ammonia pumps

Steps		Key Points	PPE/Hazards
1.	Lock out and tag the switchgear on the ammonia pump supply pump that is to be worked on.	Verify witch pump is to be worked on with a qualified operator. There are 2 ammonia supply pumps (North and South)	
2.	Close the suction and discharge valves on the ammonia supply pump that is to be worked on.	If the valves are hard to close, use a valve wrench.	

CAUTION

OPEN ALL THE AMMONIA AND STEAM VALVES SLOWLY

3.	Open the vent valve on the discharge side of the ammonia supply pump and depressurize it.	If the vent line is plugged, you can hook up a hose to the port on the discharge side of the ammonia supply pump.	
4.	After the ammonia supply pump has depressurized, hook up the steam hose to the steam port on the suction side of the pump.	Verify that the steam hose is wire reinforced. Use a safety clip to secure the hose to the vent line.	
5.	Open the valve on the steam port.		
6.	Slowly open the steam to the ammonia supply pump and let the steam run through the ammonia supply pump for minimum of 20 minutes.		
7.	After the 20 minutes or longer close the steam valve on the steam supply line, and let the pump depressurize again.		

Steps		Key Points	PPE/Hazards
8.	After the pump has depressurized, close the valve on the steam port and disconnect the steam hose.		
9.	Notify the "A" operator or the persons doing the work on the ammonia supply pump that it ready to be worked on.		
10.	After the ammonia supply pump has been repaired or replaced, hook up the ammonia vapor hose from the unloading compressor to the port on the suction side of the ammonia supply pump and open the valve.	Open the ammonia valve slowly. Use a safety clip to secure the ammonia vapor hose to the port coupler.	
11.	Close the bleed valve on the ammonia vapor line.		
12.	Open the ammonia vapor valve slowly and push the ammonia vapor through the ammonia supply pump for 30 seconds.		
13.	Close the vent valve on the discharge side of the pump; this will pressure the pump with ammonia.		
14.	Close the valve on the port on the suction side of the ammonia supply pump.		
15.	Close the valve on the ammonia vapor supply line.		
16.	Open the bleed valve on the ammonia vapor supply line and bleed the pressure off the vapor hose.		
17.	After the pressure has bled off the ammonia hose, disconnect the hose.		Possible exposure to ammonia
18.	Open the valve on the suction and discharge sides of the ammonia supply pump.		
19.	Unlock the switchgear on the ammonia supply pump.		
20.	Notify the "A" that the ammonia supply pump is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

ADJUSTING THE DUST SUPPRESSANT TO THE RIBBON BLENDER

Granulation "C" Operator-01
3/11/03

Objective: Provide operating personnel with step-by-step instruction on how to Adjust The Dust Suppressant To The Ribbon Blender.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Wrench

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required		

TASKS:

1. Loosening and tightening the lock nut on the pressure regulator.
2. Increasing or decreasing the pressure.
3. Open and close valves

Steps		Key Points	PPE/Hazards
1.	If the product going over the shipping warehouse is too dusty, increase the pressure on the pressure regulator.		
2.	Loosen the lock nut, and turn the regulator adjustment screw clock wise, watching the pressure gauge while making the adjustment until it reaches the desired pressure.	The maximum pressure is 45 psi for the spray nozzles.	
3.	After reaching the desired pressure tighten the lock on the pressure regulator.		
4.	If the required dust suppressant is more than 45 psi the spray nozzle will have to be change to a larger size.		
5.	To change the spray nozzle, close the dust suppressant valve on the supply line, which will automatically circulate the dust suppressant back to the supply tank.		
6.	Open the steam valve and steam out the line to the spray nozzle.		
7.	Close the steam valve after approximately 45 seconds.		
8.	Remove the nut from the bolt that secures the spray nozzle bracket to the ribbon blender.		

CAUTION

THE DUST SUPPRESANT LINE AND NOZZLE WILL BE HOT AFTER STEAMING IT OUT

9.	Pull the line and spray nozzle out of the ribbon blender.	The line and nozzle will be hot.	
10.	Remove the spray nozzle and replace it with the proper size spray nozzle for the desired flow rate required.		

Adjusting the Dust Suppressant to the Ribbon Blender

Steps		Key Points	PPE/Hazards
11.	Reinstall the spray nozzle and line in to the ribbon blender.		
12.	Open the dust suppressant valve on the supply line and adjust to the proper pressure.		
13.	If the product has too much dust suppressant on it decrease the pressure.	The minimum pressure on a spray nozzle is 20 psi.	
14.	Loosen the lock nut on the pressure regulator.		
15.	Turn the pressure regulator adjustment screw counter clock wise, watching the pressure gauge while making the adjustment until it reaches the desired pressure.		
16.	After reaching the desired pressure tighten the pressure regulator lock nut.		
17.	If the desired flow rate is lower that 20 psi, follow steps #5 through #12.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

RUNNING TITRATIONS AND SPECIFIC GRAVITIES

Granulation "B" Operator-01
03/7/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to run slurry and scrubber acid titrations.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment: Berets, erlenmeyer, magmix, magnet, phenolphthalein, bromocresol green, squeeze bulb, Na0H (sodium hydroxide), Hcl. (hydrochloric acid) and a calculator.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Rubber gloves • Hearing protection as required.	• Watch for hot splashing slurry • Watch for trip hazards	

TASKS:

1. Retrieving slurry or acid samples.
2. Running the titration
3. Recording the data.

Steps		Key Points	PPE/Hazards
1.	Fill an erlenmeyer with 50 ml. of demineralized water.		
2.	Place a magnet in the erlenmeyer.		

NOTE

WEAR SAFETY GLASSES WHEN HANDLING CHEMICALS

3.	Put 5-7 drops of phenolphthalein in to the erlenmeyer.		

CAUTION

OPEN THE SAMPLE PORTS SLOWLY TO PREVENT ANY SPLASHING AND DIRECT CUP FROM BODY. PLEASE ROLL LONG SLEEVES DOWN TO AVOID SPLASHING ON PERSON.

4.	Collect a sample of the media that is going to be tested with a sample cup.		

CAUTION

POUR THE MEDIA INTO THE GRANUATED CYLINDER SLOWLY TO PREVENT ANY SPLASHING

5.	Pour the media into a graduated cylinder and place a hydrometer into the media to get the specific gravity.		
6.	Read the hydrometer and record the data. Notify the "A" operator what specific gravity is.		
7.	Fill the squeeze bulb with the media from the sample cup or the graduated and put 5-7 drops into the erlenmeyer.		
8.	Place the erlenmeyer on the magmix under the beret with the Na0H		

	(sodium hydroxide).		
Steps		**Key Points**	**PPE/Hazards**
9.	Start the magmix that will stir the solution in the erlenmeyer.		
10.	Start adding the Na0H (sodium hydroxide) until the solution turns a light shade of pink.	Ad the NaOH slowly so that the color change won't turn too fast.	
11.	Move the erlenmeyer onto the magmix under the beret with the Hcl. (hydrochloric acid).		
12.	Ad 5-7 drops of bromocresol green to the solution in the erlenmeyer.		
13.	Start the magmix and start adding the Hcl. (hydrochloric acid) to the solution until the solution turn a light shade of yellow.	Ad the Hcl slowly so that the color change won't turn too fast.	

NOTE

The equation for calculating a titration is; take the number from the first beret (NaOH) ÷ by the second beret (Hcl) = then – 2.00 =

Example- 9.5 ÷ 5.7 – 2.00 = 0.33

14.	Use a calculator to calculate the data from the berets and record the data.		
15.	Empty the graduated cylinder into the lab sink.	Pour slowly to prevent any splashing.	
16.	Notify the "A" operator of the results from the calculation.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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TRAINEE: _____

DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Shipping

Sampling Granular Product

May 4, 2004

Objective: Provide operating personnel with step-by-step instructions on proper sampling technique of granular shipments.

Requirements: Not applicable

Required Documents: Not applicable

Tools and Equipment: Small can, rope, fractional splitter, riffle splitter, splitter pans and sample bags.

PPE	Hazards	Environmental Considerations
• **Hardhat** • **Steel toe boots** • **Safety glasses** • **Work gloves** • **Hearing protection as required.**	• **Falling material** • **Falls**	

TASKS:

1. Obtain a representative sample of the granular material being shipped.
2. Prepare a representative portion for the lab
3. Prepare a representative portion to be retained.
4. Prepare a representative sample for field screening (if required)

	Steps	Key Points	PPE/Hazards
1.	Swing the rope that is tied to the small can through the product discharge stream.		
2.	Pour the contents into the top of the fractional splitter.		
3.	Continue steps 1 and 2 until approximately 1000 grams of sample have been obtained.		

CAUTION

Do not lean over the railing while acquiring the sample.

4.	Discard all product that is in the reject bucket.		
5.	Pour the 1000-gram sample evenly and slowly into the top of the riffle splitter.	This will divide the sample into two equal portions.	
6.	Remove both pans from under the riffle splitter.		
7.	Place two empty pans under the riffle splitter.		
8.	Pour contents of one pan, from the first split, evenly and slowly into the top of the riffle splitter.		
9.	Pour the contents of one pan from this split into the lab sample composite bucket.		
10.	Combine the contents of the two pans.		
11.	Place two empty pans under the riffle splitter.		
12.	Pour the entire contents evenly and slowly into the top of the riffle splitter.		

Steps		Key Points	PPE/Hazards
13.	Use the contents of one pan for a screen analysis, if required.		
14.	Place the contents of the second pan in a sample bag to be retained.		

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE WEST PIPE CROSS REACTOR FEED PUMP

Granulation "C" Operator-01
02/28/03

Objective Provide operating personnel with step-by-step instruction on how to Switch To The East Pipe Cross Reactor Feed Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Valve wrench, pipe wrench, rod, running water hose and a radio.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Hearing protection as required • Saranex Suit • Face shield • Rubber gloves	• Watch for pinch points. • Watch for poor footing. • Watch for overhead obstructions.	

TASKS:

1. Opening and closing valves
2. Roding out the lines.

Steps		Key Points	PPE/Hazards
1.	Close the drain valve on the suction side of the west pump.		
2.	Close the steam port valve on the suction side of the west pump.		
3.	Close the steam port valve on the discharge side of the west pump.		
4.	Open the suction valve on the west pump.		
5.	Verify that the packing water is set for the desired flow rate.		
6.	Notify the "A" operator that you are ready to have the east Pipe Reactor Feed pump shut down.	Use a radio to communicate with "A" operator.	
7.	After the "A" operator tells you that the east pump is down, close the discharge valve on the cross over on the east pump.	The valves may be stiff and require the use of a valve wrench or a pipe wrench. Watch for poor footing. Watch for poor body position.	
8.	Open the discharge valve on the west pump		
9.	Notify the "A" operator that the west pipe cross reactor feed pump is ready for service.		

NOTE

AFTER STARTING THE PUMP, CHECK FOR VIBRATION AND ABNORMAL NOISES

10.	After the east pump has been started and flow has been established, close the suction valve on the east pump.		

Steps	Key Points	PPE/Hazards

CAUTION

SLURRY TEMP RUNS ABOUT 216°

11.	Open the drain valve on the suction side of the east pump.	The drain and steam port valves may be plugged and require the use of rod to clean it out.	Watch for splashing hot slurry. Watch for slippery conditions on the floor.
12.	Open the steam port valve on the suction side of the east pump.		
13.	Wash down the slurry on the floor to the floor sump.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE NORTH DRYER SCRUBBER TRANSFER PUMP

Granulation "C" operator-01
02/24/03

Objective: Provide the operating personnel with step-by-step instruction on how to Switch To The North Dryer Scrubber Transfer Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Hammer, shovel, bar, and a water hose.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves. • Hearing protection as required	• Watch for pinch points. • Watch for poor footing.	

TASKS:

1. Install and remove blanks.
2. Open and closing valves.
3. Cleaning out the pot.

Steps	Key Points	PPE/Hazards

NOTE

BEFORE INSTALLING THE BLANK ON THE NORTH SIDE OF THE DRYER SCRUBBER PUMP TANK SEPARATOR POT, OPEN THE SUCTION VALVE AND FLUSH OUT ON DEBRIS THAT MAY BE PLUGGING THE LINE

1.	Open the north dryer scrubber pump tank separator pot suction valve and flush out any debris that may be plugging the line.	Watch for spraying and splashing scrubber solution.	
2.	Place the blank on the north side of the separator pot and install the wedge pins.	Watch for pinch points. Watch for poor body position.	
3.	Open the north suction valve on the separator pot.	Watch for gasket or valve failure.	
4.	Open the north discharge valve slowly.	Watch for gasket or valve failure.	

NOTE

AFTER STARTING THE PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

5.	Notify the "A" operator that the north pump is ready to be started.		
6.	Watch for the north pump to start, when the flow has been established, the "A" operator can shut the south pump being down.	Watch for acid draining out of the south pump.	
7.	Close the south pump discharge valve.		
8.	Close the south pump suction valve.		
9.	Remove the wedge pins from the south blank on the separator pot and drain the acid out of the pot.	Watch for acid spaying out from the blank.	

Steps		Key Points	PPE/Hazards
10.	After the acid has finished draining remove the blank.	Watch for pinch points. Watch for poor body position.	
11.	Clean out the build-up from the south separator pot and the screen.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE EAST PIPE CROSS REACTOR FEED PUMP

Granulation "C" Operator-01
02/28/03

Objective: Provide operating personnel with step-by-step instruction on how to Switch To The East Pipe Cross Reactor Feed Pump While Running.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training. .

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Valve wrench, pipe wrench, rod, running water and a radio.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Hearing protection as required • Saranex Suit • Face shield • Rubber gloves	• Watch for pinch points. • Watch for poor footing.	

TASKS:

1. Opening and closing valves
2. Roding out the drain lines.

Steps		Key Points	PPE/Hazards
1.	Close the drain valve on the suction side of the east pump.		
2.	Close the steam port valve on the suction side of the east pump.		
3.	Open the suction valve on the east pump.		
4.	Verify that the packing water is set for the desired flow rate.		
5.	Notify the "A" operator that the west Pipe Reactor Feed pump is ready to shut down.	Use a radio to communicate with "A" operator.	
6.	After the "A" operator tells you that the west pump is down, close the discharge valve on the west pump.	The valves may be stiff and require the use of a valve wrench or a pipe wrench. Watch for poor footing. Watch for poor body position.	
7.	Open the discharge valve on the cross over on the east pump.		
8.	Notify the "A" operator that the east pipe cross reactor feed pump is ready for service.		

NOTE

AFTER STARTING THE PUMP, CHECK FOR VIBRATION AND ABNORMAL NOISES

9.	After the east pump has been started and flow has been established, close the suction valve on the west pump.		

Steps	Key Points	PPE/Hazards

CAUTION

SLURRY TEMP RUNS ABOUT 216°

10.	Open the drain valve on the suction side of the west pump.	The drain and steam port valves may be plugged and require the use of rod to clean it out.	Watch for splashing hot slurry. Watch for slip hazard.
11.	Open the steam port on the suction side of the west pump.		
12.	Wash down the slurry on the floor to the floor sump.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE WEST PRENEUTRALIZER TRANSFER PUMP

Granulation "C" Operator-01
02/24/03

Objective: Provide the operating personnel with step-by-step instruction on how to Switch To The West Preneutralizer Transfer Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Hammer, shovel, bar, and a water hose.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Watch for pinch points. • Watch for poor footing.	

TASKS:

1. Install and remove blanks.
2. Open and closing valves.
3. Cleaning out the pot.

Steps		Key Points	PPE/Hazards
1.	Shut the wash water off to the west preneutralizer transfer pump discharge line.	The "B" operator will shut the wash water off.	

NOTE

BEFORE INSTALLING THE BLANK ON THE EAST SIDE OF THE GRANULATOR SCRUBBER PUMP TANK SEPARATOR POT, OPEN THE SUCTION VALVE AND FLUSH OUT ON BEBRIS THAT MAY BE PLUGGING THE LINE

2.	Open the west granulator scrubber pump tank separator pot suction valve and flush out any debris that may be plugging the line.	Watch for spraying and splashing scrubber solution.	
3.	Place the blank on the west side of the separator pot and install the wedge pins.	Watch for pinch points. Watch for poor body position.	
4.	Open the west suction valve on the separator pot.	Watch for gasket or valve failure.	
5.	Open the west discharge valve slowly.		

NOTE

AFTER STARTING THE PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

6.	Notify the "A" operator that the west pump is ready to be started.		
7.	Watch for the west pump to start, when the flow has been established, the "A" operator can shut the east pump down.		
8.	Close the east pump suction valve on the separator pot.		
9.	Remove the wedge pins from the east blank on the separator pot and drain the acid from the pot.	Watch for acid spaying out from the blank.	

10.	After the acid has finished draining remove the blank.	Watch for pinch points. Watch for poor body position.	
11.	Clean out the build-up from the east pot and the screen.		
12.	Notify the "B" operator that the east preneutralizer transfer pump Is ready for the wash water.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PREPARING THE WEST PRENEUTRALIZER TANK TRANSFER PUMP FOR START UP

Granulation "C" Operator-01
3/14/03

Objective: Provide operating personnel with step-by-step instruction on how to Prepare The West Preneutralizer Tank Transfer Pump For Start.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Hammer and a valve wrench or pipe wrench.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Watch for slippery conditions on the floor around the granulator scrubber separator pot. • Watch for pinch points. • Watch for poor body position.	

TASKS:

1. Open and close the valves.
2. Install the blank.
3. Install the wedge pins.

Steps	Key Points	PPE/Hazards

NOTE

THE "A" OPERATOR WILL IDENTIFY WHICH PRENEURALIZER TRANSFER PUMP THAT IS TO BE PREPARED FOR SERVIVE

1.	Inspect the gasket on the west side of the granulator scrubber pump tank separator pot.	The gasket must be clean or it will not seal properly.	
2.	Install the blank on the west side of the granulator scrubber pump tank separator pot.	Watch for pinch points. Watch for poor body position.	
3.	Install the wedge pins that secure the blank to the separator pot.		
4.	Verify that the drain valve is close on the suction side of the west preneutralizer transfer pump line.		
5.	Open the west suction valve on the separator pot to the west dryer scrubber pump tank transfer pump.		
6.	Verify that the discharge valve on the west preneutralizer tank transfer pump line is open, if closed open it.		
7.	Verify that the packing water on the west preneutralizer pump is set for the proper flow rate.		
8.	Verify that the suction valve on the east side of the granulator scrubber pump tank separator pot is closed, if open close it		
9.	Verify that the discharge valve on the east preneutralizer transfer pump is open, if closed open it.		

Steps		Key Points	PPE/Hazards
10.	If the blank is on the east side of the granulator scrubber pump tank separator pot, remove the wedge pins from the blank and remove the blank.		
11.	Notify the "B" operator that the east preneutralizer transfer pump is ready to for the wash water.		
12.	Notify the "A" operator that the west preneutralizer transfer pump is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

Agrium

Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

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DATE: _____

Agrium

Conda Phosphate Operations

Standard Operating Procedures

Granulation

PREPARING THE EAST PRENEUTRALIZER TANK TRANSFER PUMP FOR START UP

Granulation "C" Operator-01
3/14/03

Objective: Provide operating personnel with step-by-step instruction on how to Prepare The East Preneutralizer Tank Transfer Pump For Start.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: Hammer and a valve wrench or pipe wrench.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Watch for slippery conditions on the floor around the granulator scrubber separator pot. • Watch for pinch points. • Watch for poor body position.	

TASKS:

1. Open and close the valves.
2. Install the blank.
3. Install the wedge pins.

Steps	Key Points	PPE/Hazards

NOTE

THE "A" OPERATOR WILL IDENTIFY WHICH PRENEURALIZER TRANSFER PUMP THAT IS TO BE PREPARED FOR SERVIVE

1.	Inspect the gasket on the east side of the granulator scrubber pump tank separator pot.	The gasket must be clean or it will not seal properly.	
2.	Install the blank on the east side of the granulator scrubber pump tank separator pot.	Watch for pinch points. Watch for poor body position.	
3.	Install the wedge pins that secure the blank to the separator pot.		
4.	Verify that the drain valve is close on the suction side of the east preneutralizer transfer pump line.		
5.	Open the east suction valve on the separator pot to the east dryer scrubber pump tank transfer pump.		
6.	Verify that the discharge valve on the east preneutralizer tank transfer pump line is open, if closed open it.		
7.	Verify that the packing water on the east preneutralizer pump is set for the proper flow rate.		
8.	Verify that the suction valve on the west side of the granulator scrubber pump tank separator pot is closed, if open close it		
9.	Verify that the discharge valve on the west preneutralizer transfer pump is open, if closed open it.		

Steps		Key Points	PPE/Hazards
10.	If the blank is on the west side of the granulator scrubber pump tank separator pot, remove the wedge pins from the blank and remove the blank.		
11.	Notify the "B" operator that the west preneutralizer transfer pump is ready to for the wash water.		
12.	Notify the "A" operator that the east preneutralizer transfer pump is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

OPERATIONS PROCEDURE ACKNOWLEDGEMENT

With my signature I am acknowledging that I have read the procedure, I understand the procedure and that I will comply with the procedure.

TRAINEE: _____

DATE: _____

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PREPARING THE WEST PIPE CROSS REATOR FEED PUMP FOR START UP

Granulation "C" Operator-01
02/27/03

Objective: Provide operating personnel with step-by-step instruction on how to Prepare The West Pipe Cross Reactor Feed Pump For Start Up.

Requirements: Must have Department of Transportation training, Process Safety Management training and Procedure Training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Valve wrench, pipe wrench and a rod.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Watch for pinch points. • Watch for poor footing.	

TASKS:

1. Opening and closing valves
2. Roding out the lines.

Steps	Key Points	PPE/Hazards

NOTE

THE "A" OPERATOR WILL IDENTIFY WHICH PIPE CROSS REACTOR FEED PUMP THAT IS TO BE PREPARED FOR SERVIVE

1.	Verify that the preneutralizer tank is empty and the east and west pipe cross reactor feed pumps are down.	Check with a qualified operator.	
2.	Close the drain valve on the suction side of the west pump.		
3.	Close the steam port on the suction side of the west pump.		
4.	Close the steam port on the discharge side of the west pump.		
5.	Open the discharge valve on the west pump.	The valves may be stiff and require the use of a valve wrench or a pipe wrench. Watch for poor footing. Watch for poor body position.	
6.	Open the suction valve on the west pump.		
7.	Verify that the packing water is set for the desired flow rate.		
8.	Verify that the east pump discharge valve on the cross over is closed, if not close it.		
9.	Verify that the east pump suction valve is closed, if not close it.		

Steps	Key Points	PPE/Hazards

CAUTION

WATCH FOR HOT SPLASHING WATER OR ACID WHEN RODING OUT STEAM PORTS OR DRAIN VALVES

10.	Verify that the drain valve on the suction side of the east pump is open, if not open it.	Steam port and drain lines may be plugged and may require the use of a rod to clean it out	Watch for a slip hazard if there is acid or water on the floor.
11.	Verify that the steam port valve on the suction side of the east pump is open, if not open it.		
12.	Notify the "A" operator that the west pipe cross reactor feed pump is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING TO THE SOUTH DRYER SCRUBBER TRANSFER PUMP

GRANULATION "C" OPERATOR- 01
02/24/03

Objective: Provide the operating personnel with step-by-step instruction on how to Switch To The South Dryer Scrubber Transfer Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Hammer, shovel, bar, and a water hose.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Watch for pinch points. • Watch for poor footing.	

TASKS:

1. Install and remove blanks.
2. Open and closing valves.
3. Cleaning out the pot.

Steps	Key Points	PPE/Hazards

NOTE

BEFORE INSTALLING THE BLANK ON THE SOUTH SIDE OF THE DRYER SCRUBBER PUMP TANK SEPARATOR POT, OPEN THE SUCTION VALVE AND FLUSH OUT ON DEBRIS THAT MAY BE PLUGGING THE LINE

1.	Open the south dryer scrubber pump tank separator pot suction valve and flush out any debris that may be plugging the line.	Watch for spraying and splashing scrubber solution.	
2.	Place the blank on the south side of the separator pot and install the wedge pins.	Watch for pinch points. Watch for poor body position.	
3.	Open the south suction valve on the separator pot.	Watch for gasket or valve failure.	
4.	Open the south discharge valve slowly.	Watch for gasket or valve failure.	

NOTE

AFTER STARTING THE PUMP CHECK FOR VIBRATION AND ABNORMAL NOISES

5.	Notify the "A" operator that the south pump is ready to be started.		
6.	Watch for the south pump to start, when the flow has been established, the "A" operator can shut the north pump down.	Watch for acid draining out of the south pump.	
7.	Close the north pump discharge valve.		
8.	Close the north pump suction valve on the separator pot.		
9.	Remove the wedge pins from the north blank on the separator pot and drain the acid out of the pot.	Watch for acid spaying out from the blank.	

Steps		Key Points	PPE/Hazards
10.	After the acid has finished draining remove the blank.	Watch for pinch points. Watch for poor body position.	
11.	Clean out the build-up from the north pot and the screen.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

RESETTING THE AMMONIA VAPOR EXCESS FLOW VALVE

Granulation "C" Operator-01
3/18/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Reset The Ammonia Vapor Excess Flow Valve.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Exposure to ammonia	• Ammonia release

TASKS:

1. Opening and closing valves.

Steps	Key Points	PPE/Hazards

NOTE

IF THE AMMONIA VAPOR EXCESS FLOW VALVE TRIPS AND SHUTS THE AMMONIA UNLOADING COMPRESSOR DOWN, IT WILL HAVE TO BE RESET

1.	During the ammonia unloading process if the ammonia vapor excess flow valve on the ammonia vapor line trips shut it will shut the ammonia compressor down, it will have to be reset.		
2.	To reset the ammonia vapor excess flow valve, close the liquid ammonia valve to the unloading compressor.		
3.	Close the ammonia vapor valve to ammonia unloading compressor.		
4.	Close the ammonia vapor valve on the ammonia vapor line on top of the ammonia sphere ahead of the excess flow valve.	The excess ammonia vapor pressure valve is located on top of the ammonia sphere.	
5.	Open the bleed off valve (petcock valve) on the side of the excess ammonia vapor flow valve and depressurize the ammonia vapor line.		
6.	After the pressure has been bled off the ammonia vapor line, reset the excess flow valve by turning the handles to the proper position.		
7.	Close the pressure bleed off valve (petcock).		
8.	Open the vapor ammonia valve that is ahead of the ammonia vapor excess flow valve.		
9.	Open the ammonia vapor valve to the ammonia-unloading compressor.		
10.	Open the ammonia liquid valve by the ammonia-unloading compressor.		

Steps	Key Points	PPE/Hazards
NOTE **AFTER STARTING THE COMPRESSOR CHECK FOR VIBRATION AND ABNORMAL NOISES**		
11.	Restart the ammonia-unloading compressor and watch the ammonia vapor pressure gauge to verify that the ammonia vapor excess flow valve has reset.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

SWITCHING AND PUTTING THE PRENEUTRALIZER TRANSFER PUMP LINES ON WASH

Granulation "B" Operator-01
4/9/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Switching and Putting The Preneutralizer Transfer Pumps On Wash.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment: Wrenches or channel locks.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves	• Watch for pinch points. • Watch for poor body potion.	

• **Hearing protection as required.**		

TASKS:

1. Closing and opening valves
2. Removing and replacing bolts and blanks

Steps	Key Points	PPE/Hazards

NOTE

THIS PROCEDURE CAN BE USED ON EITHER THE EAST OR WEST PRENEUTRALIZER TRANSFER PUMP WASH LINES

1.	Close the wash water line valve.		
2.	Remove the bolts from the flange holding the wash water hose to the preneutralizer transfer line.	Watch for pinch points.	
3.	Put the blank on the line and reinstall the bolts and tighten.		
4.	When the "A" operator tells you that the "C" operator is ready down stairs, open the valve on the transfer line that is to be put in service.		
5.	Notify the "A" that the valve is open and the pump can be started.		
6.	After flow has been established the "A" operator will shut the pump off that is being taken out of service and notify you that the valve on the line being taken out of service can be closed.		
7.	Close the valve on the line being taken out of service.		
8.	Remove the bolts holding the blank in place and remove the blank.		

Steps		Key Points	PPE/Hazards
9.	Install the wash water hose to the flange on the line to be put on wash and install the bolts.		
10.	When the "C" is ready down stairs he will notify the "A" operator that the line is ready to be put on wash.		
11.	Open the wash water line valve and verify that the wash water is coming out of the pot on the line that has been put on wash.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

CLEANING THE DRYER

Granulation "C" Operator-01
03/03/03

Objective: Provide operating personnel with step-by-step instruction on how to Clean The Dryer.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate and a Confined Space Entry permit.

Tools and Equipment: Jackhammer, double jack, Locks and tags.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required • Goggles as required	• Watch for poor footing • Watch for poor body position • Watch for trip hazards • Watch for pinch points • Watch for falling material	

TASKS:

1. Fill out a confined space entry permit.
2. Lock out and unlock switchgear.
3. Cleaning out build up.

Steps	Key Points	PPE/Hazards

NOTE

THE DRY SYSTEM MAY ALREADY BE DOWN AND COOLED ENOUGH FOR OPERATORS TO WORK, IF SO PROCEED TO STEP #3

1.	Get the tools ready to clean the dryer, if the plant is running.		
2.	The "A" operator will shut the dry system down.		

DANGER

DO NOT ENTER THE DRYER UNTIL THE TEMERATURE LEVEL IS COOL ENOUGH TO SAFELY WORK IN

3.	After the dryer system has been shut down, lock out the dryer, vent bag house switchgears, and the gas valves to the combustion chamber.		This job requires that a safety watchman.
4.	Verify that the temperature is cool enough to enter the dryer.		
5.	Monitor the air inside the dryer.		

DANGER

IF THE ATMOSPHERE QUALITY IN SIDE THE DRYER IS NOT GOOD, REPORT IT TO THE "A" OPERATOR OR TO THE SUPERVISOR. DO NOT ENTER THE DRYER UNTIL THE AIR QUALITY SUFFICENT

Steps		Key Points	PPE/Hazards
6.	Enter the dryer and start jack hammering the build up out.	Watch for trip hazards Watch for poor footing. Watch for poor body position. Watch for pinch points. Watch for falling material.	

CAUTION

ROTATE THE DRYER AS OFTEN AS REQUIRED TO ELIMINATE OVERHEAD JACK HAMMERING

7.	After all the build up has been cleaned from the dryer, remove all tools.		
8.	Unlock the dryer, vent bag house fan switchgears, and the gas valves.		
9.	Notify the "A" operator that the dryer is ready for service.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

PREPARING THE NORTH SLURRY CIRCULATION PUMP FOR START-UP

Granulation "C" operator-01
02/25/03

Objective: Provide the operating personnel with step-by-step instruction on how to Prepare North Slurry Circulation Pump.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification and Process Safety Certification.

Tools and Equipment: Valve wrench, pipe wrench and rod.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• Watch for pinch points. • Watch for poor footing. • Watch for overhead obstructions.	

TASKS:

1. Opening and closing the valves.
2. Roding out the lines.

Steps	Key Points	PPE/Hazards

NOTE

THE "A" OPERATOR WILL IDETIFY WHICH SLURRY CIRCULATION PUMP THAT IS TO BE PREPARED FOR SERVIVE

1.	Verify that the preneutralizer tank is empty.	Check with a qualified operator.	
2.	Close the drain valve on the suction side of the north pump.	Watch for pinch points. Watch for poor footing.	
3.	Verify that the steam port valve is closed on the suction side of the north slurry circulation pump.		
4.	Close the drain valve on the discharge side of the north slurry circulation pump.		
5.	Open the suction valve to the north slurry circulation pump.		
6.	Open the north slurry circulation pump discharge valve.		
7.	Close the south slurry circulation pump discharge valve on the cross over line.		
8.	Close the suction valve to south slurry circulation pump.		
9.	Open the steam port valve on the suction side of the south slurry circulation pump.		
10.	Open the steam port valve on the discharge side of the south slurry circulation pump on the cross over line.		
11.	Verify that the packing water on the north slurry circulation pump is set for the desired flow rate.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

BLEEDING OFF THE AMMONIA UNLOADING COMPESSOR SEPARATOR POT

Granulation "C" Operator-01
3/18/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Bleed The Ammonia Unloading Compressor Separator Pot.

Requirements: Operators must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Rubber gloves • Hearing protection as required • Respirator	• Exposure to ammonia	• Ammonia release

TASKS:

1. Open and close valves.

Steps	Key Points	PPE/Hazards

NOTE

THE AMMONIA UNLOADING COMPRESSOR IS EQUIPED WITH A SEPARATAR POT THE LETS THE LIQUID AMMONIA THAT IS IN THE AMMONIA VAPOR DROP OUT BEFORE THE AMMONIA VAPOR REACHES THE UNLOADING COMPRESSOR

NOTE

IF THE AMMONIA COMPRESSOR SEPERATOR POT STARTS TO FILL WITH LIQUID AMMONIA A RED WARNING LIGHT WILL COME ON

1.	If the red warning light on the out side of the ammonia pump house comes on, the ammonia separator pot will have to be bled off.	If the liquid ammonia in the separator pot gets too full it will shut the ammonia-unloading compressor down.	
2.	To bleed the ammonia separator pot off, shut the ammonia-unloading compressor down, if it has not already shut down.		
3.	Close the liquid and vapor ammonia valves on the ammonia unloading station.		
4.	Close the ammonia liquid and vapor valves by the ammonia-unloading compressor.		
5.	Open the bleed valve on the bottom of the ammonia separator pot.		
6.	Open the bleed valve on the top of the ammonia separator pot.		
7.	After the liquid ammonia has been bled out of the separator pot, close the bleed valves on the top and bottom of the ammonia separator.		

Steps		Key Points	PPE/Hazards
8.	Open the ammonia vapor and ammonia liquid valves by the ammonia-unloading compressor.		
9.	Open the ammonia vapor and liquid valves on the unloading station.		

NOTE

AFTER STARTING THE COMPRESSOR CHECK FOR VIBRATION AND ABNORMAL NOISES

10.	Restart the ammonia-unloading compressor.		

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

DEPRESSURIZING THE AMMONIA SYSTEM

Granulation "A" Operator-01
8/19/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Depressurize The Ammonia System.

Requirements: Operators must have Department Of Transportation Training, Process Safety Management Training and Procedure Training.

Required Documents: Department of Transportation certificate and Process Safety certificate.

Tools and Equipment: No tools required.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as	• Exposure to ammonia	• Ammonia release

required.		

TASKS:

1. Opening and closing valves.

Steps	Key Points	PPE/Hazards

NOTE

THE SCRUBBER SYSTEM MUST BE IN OPERATION TO DEPRESSURIZE THE AMMONIA SYSTEM TO PREVENT AN AMMONIA RELEASE

1.	Verify that the scrubber system is in service to prevent the release of ammonia to the atmosphere.	"A" operator will perform this task.	
2.	Close the liquid ammonia valve to the ammonia vaporizer.	"B" operator will perform this task.	
3.	Open the vapor ammonia valves to the Dryer and Granulator scrubbers by the automatic controller.	"B" operator will perform this task.	
4.	Open the vapor ammonia valves to the Dryer and Granulator scrubbers.	"B" operator will perform this task.	
5.	Open the vapor ammonia auto valve to the scrubbers on DCS in the control room.	"A" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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Conda Phosphate Operations

Standard Operating Procedures

Granulation

BLEEDING OFF THE D.P. CELL ON THE AMMONIA TO THE PIPE CROSS REACTOR

Granulation "A" Operator-01
8/18/03
Reviewed Date:
Reviewed By:

Objective: Provide operating personnel with step-by-step instruction on how to Bleed Off The DE.P. Cells.

Requirements: Must have Department of Transportation training, Process Safety Management training and procedure training.

Required Documents: Department of Transportation Certification, Process Safety Certification.

Tools and Equipment: Wrench or channel locks.

PPE	Hazards	Environmental Considerations
• Hardhat • Safety toe foot wear • Safety glasses • Work gloves • Hearing protection as required	• **Watch for exposure to ammonia** • **Watch for splashing ammonia**	

• Respirator		

TASKS:

1. Opening and closing the bleed valves.

Steps	Key Points	PPE/Hazards

NOTE

WHEN THE AMMONIA TO THE PIPPE CROSS REACTOR D.P. CELL FILLS WITH LIQUID AMMONIA IT WILL GIVE A FAULE INDICATION AND WILL HAVE TO BE BLED OFF

1.	Put the automatic ammonia to the pipe cross reactor controller is in the manual position.	The "A" operator will put the controller in manual.	
2.	Open the bleed valves (petcocks) on both sides of the D.P. cell and drain the liquid ammonia.	"B" operator will perform this task. Possible exposure to ammonia	
3.	After the liquid ammonia has finished draining out of the cell, close the bleed valves (petcocks)	"B" operator will perform this task.	
4.	Notify the "A" operator that the ammonia to the pipe cross reactor is ready to be put back in the auto position.	"B" operator will perform this task.	

Training Notes:

1. Must be trained with a qualified "A" operator before completing this task.

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